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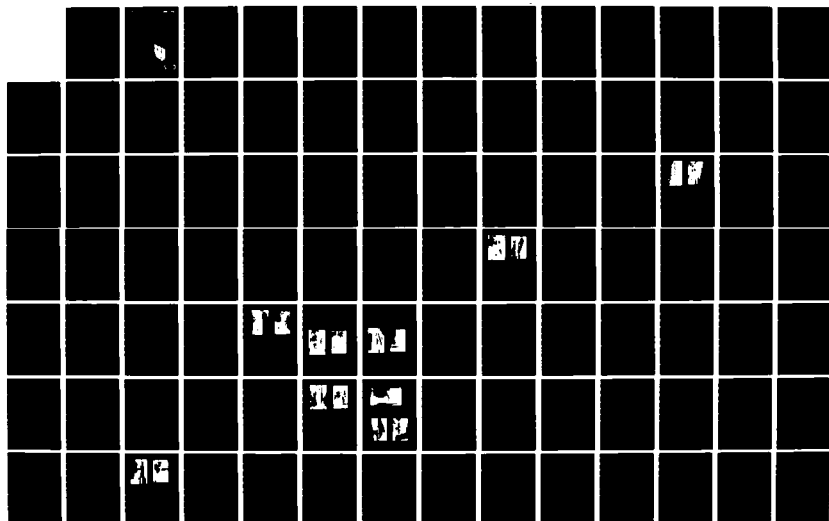
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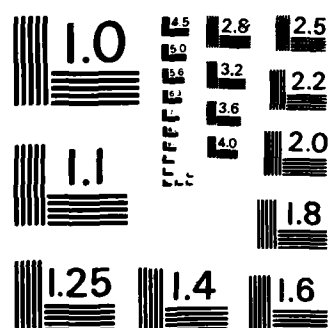
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**US Army Corps  
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Construction Engineering  
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**USA-CERL**

TECHNICAL REPORT P-85/07  
June 1985

**AD-A158 628**

# Alternative Construction and Acquisition Methods for Department of the Army Child Development Centers

by  
Richard L. Schneider

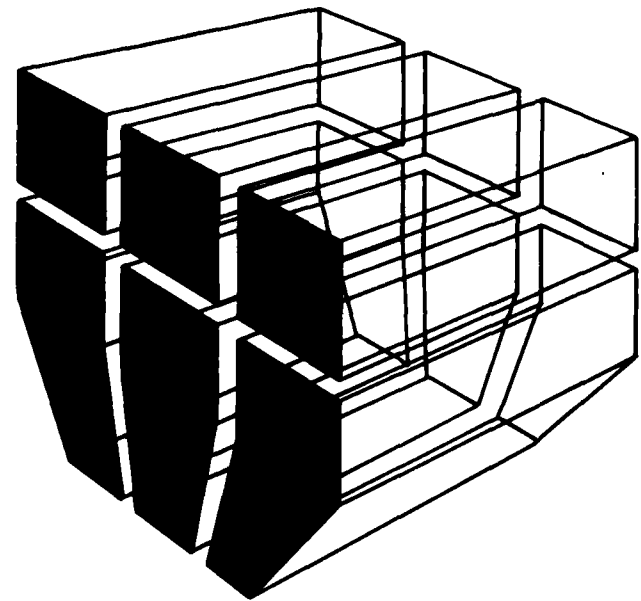
This report documents research conducted by the U.S. Army Construction Engineering Research Laboratory to reduce the Army's costs for building new child development centers. In comparison to proprietary facilities, Army centers allow more space per child, have much more conservative life safety standards, and use more expensive materials and equipment.

Construction and procurement costs can be reduced by using alternative construction methods that will provide a more usable, functional facility and often provide the Army with better value. Metal-frame modular construction, pre-engineered metal building systems, and metal-frame components were found to be most responsive to Army requirements for building child care centers.

Guidance for implementing these strategies emphasizes adequate preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CERL TR P-85/07	2. GOVT ACCESSION NO. AD-A158 628	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) ALTERNATIVE CONSTRUCTION AND ACQUISITION METHODS FOR DEPARTMENT OF THE ARMY CHILD DEVELOPMENT CENTERS		5. TYPE OF REPORT & PERIOD COVERED Final
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Richard L. Schneider		8. CONTRACT OR GRANT NUMBER(s) IAO RMM 1-84, dated 7 May 1984
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Construction Engr. Research Laboratory P.O. Box 4005 Champaign, IL 61820-1305		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE June 1985
		13. NUMBER OF PAGES 142
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)  UNCLASSIFIED
		15a. DECLASSIFICATION DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES  Copies are available from the National Technical Information Service, Springfield, VA 22161		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  child development centers day care centers construction		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  This report documents research conducted by the U.S. Army Construction Engineering Research Laboratory to (1) assess the feasibility of using alternative construction technology and facility acquisition methods to reduce the costs of building new child development centers, (2) select the most appropriate of these technologies and methods for obtaining child development centers, (3) develop guidance that Army personnel can use to implement and execute selected construction strategies, and (4) compare the requirements, standards, construction and acquisition methods, and costs of private child care facilities with those of Army facilities.		

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Construction and procurement costs can be reduced by using alternative construction methods. These techniques will produce a facility that is usable, functional, and that will often provide the Army with better value, since it allows the contractor to be more innovative in areas such as energy efficiency.

Evaluation of various alternative construction technologies indicated that metal-frame modular construction, pre-engineered metal building systems and metal-frame components are most responsive to Army requirements for building child care centers.

Guidance for implementing these strategies emphasizes adequate preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.

In comparing Army and proprietary facilities, the biggest differences were that the Army allows more space per child, has much more conservative life safety standards, and uses more expensive materials and equipment because Army buildings are constructed to have a much longer life than private facilities.

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## FOREWORD

This research was performed for the Morale, Welfare, and Recreation Division, Personnel and Community Activities Support Directorate (DAAG-DPC), The Adjutant General's Office (TAGO), Department of the Army, and funded by TAGO under Intra-Army Order RMM 1-84, dated 7 May 1984. The TAGO Technical Monitor was LTC Lois Beck.

The work was conducted by the Facility Systems (FS) Division of the U.S. Army Construction Engineering Research Laboratory (USA-CERL). The USA-CERL Principal Investigator was Mr. Richard L. Schneider. Also contributing were Ms. Cynthia D. Boyd, Mr. Thomas R. Napier, Mr. L. Michael Golish, and Mr. Craig A. Butler.

Mr. E. A. Lotz is Chief of USA-CERL-FS. COL Paul J. Theuer is Commander and Director of USA-CERL, and Dr. L. R. Shaffer is Technical Director.

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# **ALTERNATIVE CONSTRUCTION AND ACQUISITION METHODS FOR DEPARTMENT OF THE ARMY CHILD DEVELOPMENT CENTERS**

## **1 INTRODUCTION**

### **Background**

The Department of the Army (DA) has an extensive program starting in FY85 for constructing new child development centers. These facilities are required (1) to meet expanded child care needs in support of mission readiness and (2) to replace the many substandard facilities at Army installations that cannot be renovated to meet either current health and safety requirements or program requirements defined by DA Child Development Services (DACF-FSC).

Army child development facilities are designed and built in accordance with Army Regulation 608-10<sup>1</sup> and the draft joint services Design Guide 1110-3-143,<sup>2</sup> following conventional construction and Military Construction, Army (MCA) practices. However, the propriety of Army child care programs, construction standards, and acquisition procedures has recently been challenged by the Congress following reports of significant cost differences between Army and proprietary construction practices. During the FY85 budget review, the House Armed Services Committee (HASC) called for a 10 percent reduction in the budget request for child development centers; the Senate Armed Services Committee (SASC) required that "the Services seek to enter into a third party contract via the competitive bidding process with a private firm to build and operate" child development centers. This, along with strong recommendations the previous year that the Services consider various alternative construction methods for MCA projects, has led the Army to explore alternative means of acquiring child development facilities and services at reduced cost.

DA first identified a series of three studies to determine the best way to obtain child development facilities and/or services. These were to address four major areas: (1) Army experience with One-Step Procurement of child development facilities; (2) design and construction requirements for proprietary child development facilities; (3) alternative construction materials, standards, and acquisition methods; and (4) feasibility of and means by which Army facilities may be constructed and/or operated on contract with third parties. The results of these studies would help determine (1) the most appropriate design and construction standards (Army, proprietary, or a specific mix); (2) the most feasible and advantageous facility acquisition methodology (MCA or Turn-key); and (3) the feasibility of contracting with a third party for operation or both construction and operation of child development centers.

<sup>1</sup> Army Regulation 608-10, *Child Development Services* (Department of the Army, October 1983).

<sup>2</sup> Design Guide 1110-3-143, *Planning and Design of Child Support Services Facilities* (Draft) (Office of the Chief of Engineers [OCE]).

The U.S. Army Construction Engineering Research Laboratory (USA-CERL) was requested to assess the feasibility of using alternative construction methods to obtain child development facilities and prepare procedural guidance on the use of alternative methods. The U.S. Army Engineer Division, Southwest, was asked to report on the Fort Irwin child development center One-Step Procurement experience. The third "study" to address the feasibility of contracting for child care service with a third party is being accomplished by an actual "test" solicitation for facilities and services.

### **Purpose**

The purpose of this report is to document the USA-CERL phase of the study, which had the following objectives: (1) assessing the feasibility of using alternative construction technology and facility acquisition methods to reduce the acquisition costs of DA child development centers; (2) selecting the most appropriate alternative construction technologies and acquisition methods for obtaining DA child development centers; (3) developing guidance for DA personnel to implement and execute selected alternative strategies; and (4) comparing proprietary child care industry facilities' requirements, standards, construction and acquisition methods, and costs to Army requirements and facilities cost experience.

### **Approach**

Information on generic alternative construction technologies and acquisition methods was assembled from in-house sources to assess their capability to respond to Army requirements for building child care centers. Guidance was then developed on alternative construction and acquisition methods currently available to the Corps of Engineers.

Information on proprietary child care facilities was gathered by phone and by written and direct surveys of proprietary care organization headquarters and center personnel. The information obtained was selected to correspond to key Army facility and program criteria. As a minimum, data were obtained that would define the types of services offered, the appropriate construction standards, the associated facilities acquisition costs, and the space and facilities required to accommodate the services provided. Information on license and life safety criteria was obtained from organization personnel or from state and local licensing and building code officials. Additional information was obtained where available to define any alternative construction and acquisition methods used by proprietary organizations. This information was compared with Army programs and facility requirements.

### **Scope**

No survey of commercially available systems or alternative acquisition practices was made. The information assembled displays only the compatibility of generic alternative construction technologies with Army construction standards and the functional requirements of Army child development centers. Differences between Army and proprietary facility standards must be evaluated in more detail to determine if changes are warranted in Army criteria.

### **Mode of Technology Transfer**

It is recommended that the information in this report be used directly by DACF-FSC, installation, and Corps of Engineers personnel to carry out child development center construction projects. This information may eventually form the basis for revisions to AR 608-10 and/or Draft DG 1110-3-143.

## 2 DESCRIPTION AND EVALUATION OF ALTERNATIVE CONSTRUCTION TECHNOLOGY AND ACQUISITION METHODOLOGY

### Procurement Approach

The use of alternative construction technologies and acquisition methodologies has been identified as a way to reduce the cost of acquiring DA child development centers. The Army has used these techniques with success in the past, mostly for family housing, but most recently for several test MCA projects. In these test projects, all executed over the past two years, three utilizing a Two-Step procurement approach and one using a One-Step procurement approach, facilities were designed and constructed at costs between 28 and 32 percent below the Government estimates. Furthermore, the majority of these facilities were delivered in 25 to 50 percent less time than anticipated. Similar results may be anticipated with the application of these approaches to the acquisition of DA child development centers.

The key to successful cost reduction is primarily in selecting and executing the appropriate methodology or procurement approach and only secondarily with the alternative construction technology itself. The procurement methodology will ultimately control project economies by maximizing cost competition and applicability of alternative technologies from the construction industry, while keeping enough control over the project to deliver a constructible, functional, and usable facility.

Two procurement methodologies for acquiring DA child development centers are alternatives to the conventional MCA project procedures: One-Step Competitive Negotiation and Two-Step Formal Advertising (abbreviated as One- and Two-Step). These methods differ from the conventional competitive bidding process in that each solicits proposals for executing the design and construction of a facility, rather than bids for constructing a single design solution.

One- and Two-Step are both "design/build" approaches which, through the use of performance-oriented procurement documents, allow the market to determine the most advantageous and economical construction approach. Both approaches allow alternative construction technologies to compete, enhance competition, provide the opportunity and incentives for design and technical innovation, and integrate design and construction responsibility with a single party, which experience has shown expedites construction. However, the One-Step approach provides greatest advantages. One-Step procedures base award on factors in addition to construction cost, such as design quality, technical performance, or energy efficiency. This approach rewards proposers for submitting designs that exceed the project minimum requirements for the best value to the Government.

It is anticipated that the Corps of Engineers will select a One-Step approach as a test case for acquiring DA child care centers. This is based on the current removal of restrictions governing the use of One-Step for projects other than family housing, discussions with the Architecture and Buildings Systems Branch of the Office of the Chief of Engineers (OCE) (DAEN-ECF A) on the FY85 Child Care Program, and the distinct advantages of One-Step in obtaining the best value. Both approaches will be defined in more detail below, but guidance will be presented only for a One-Step approach.

### *One-Step Competitive Negotiation*

In a One-Step approach, the Government solicits design and bid proposals by issuing a Request for Proposal (RFP). The RFP contains standard contract forms, instructions and clauses; price proposal schedules; a description of the project conditions; site data; descriptive and performance specifications identifying the facility requirements; and comprehensive evaluation criteria and procedures. Definitive design and technical criteria are not prescribed. Proposers prepare and submit technical proposals and bids in response to the RFP. Proposals are reviewed for conformance to the RFP, and proposers are given a preliminary responsibility check. Nonconforming proposals and nonresponsible proposers may be disqualified; however, adjustments to the proposal may be allowed if they are determined to be in the Government's best interest. Conforming proposals are then evaluated and scored for technical performance following a pre-established point scheme reflecting a specific project's needs and priorities. Final scores are established for proposals based on all identified evaluation criteria, and a determination is made of the proposals within the competitive range. Negotiations, if conducted, are held with all proposers in the competitive range, followed by a request for best and final offers. Last, a selection and recommendation for award is made from proposals determined to be within the competitive range of the proposal that shows the cost/quality balance most advantageous to the Government. After contract award, the contractor completes final designs, engineering analyses, and construction documents, submits them for approval, and begins construction.

The Corps of Engineers' manual on Turnkey Family Housing<sup>3</sup> is currently the only formal guidance published on the One-Step approach. Although developed for a different building type, it gives the basic methodology and instruction for executing a One-Step project. Alternatively, USA-CERL Technical Report P-132,<sup>4</sup> although written to address Two-Step, provides guidance on project selection/initiation, development of technical/procurement documents, proposal evaluation, and construction administration that also applies equally to One-Step. USA-CERL is now developing other One-Step guidance to be issued by OCE as Architecture and Engineering Instructions for both MCA and Non-Appropriated Fund (NAF) projects.

### *Two-Step Formal Advertising*

In a Two-Step approach, the Government solicits design and bid proposals by issuing a Request for Technical Proposal (RFTP). The RFTP contains standard contract forms, instructions and clauses, a description of the project conditions, site data, and descriptive and performance specifications identifying the facility requirements. Definitive design and technical criteria are not given.

Proposers prepare and submit technical proposals in response to the RFTP (Step 1). Proposers are given a preliminary responsibility check. Proposals are reviewed by the Government for design and technical adequacy and for conformance to RFTP requirements. Nonconforming proposals and nonresponsible proposers may be disqualified; however, if determined to be in the Government's best interest, adjustments to the proposal may be allowed.

<sup>3</sup>*Procurement Procedure Manual for One-Step "Turnkey" Negotiated Contract for Army Family Housing* (OCE, DAEN-ECE-A, June 1980).

<sup>4</sup>T. Napier and M. Golish, *A Systems Approach to Military Construction*, Technical Report P-132/ADA123382 (U.S. Army Construction Engineering Research Laboratory, 1982).

Proposers with technical proposals that are determined to be acceptable then submit bids on their own proposals (Step 2). Contract award is based on the lowest bid of the acceptable proposals, as for conventional formal advertising. After contract award, the contractor completes final designs, engineering analyses, and construction documents, submits them for approval, and begins construction.

### **Alternative Construction Technology Generic Descriptions**

The following three primary and eight secondary "generic" descriptions of building construction technologies and methodologies are all available and could be used to acquire DA child development centers. These descriptions have been developed for this study based on current definitions used by the various manufactured or prefabricated building trade associations and other industry representatives, as well as previous USA-CERL studies. They are generic descriptions only. Building construction technologies available in the construction market place will vary slightly from the offered descriptions depending on the construction approach of the individual producer; many "hybrids" are possible. The descriptions are offered to assess the feasibility of these approaches for constructing Army facilities, and are definitions used throughout this report. Asterisked items are alternative technologies most compatible with the requirements for DA child development centers.

#### *Conventional/Site Constructed Buildings*

Traditional Materials

Innovative/Nontraditional Materials

#### *Modular Building Systems*

Wood-Frame Modular Construction

Metal-Frame Modular Construction

Precast Concrete Modular Construction

#### *Pre-engineered Building Systems*

Pre-engineered Metal Building System

Precast Concrete Building System

#### *Component Construction*

Wood-Frame Components

Metal-Frame Components

Precast/Prestressed Concrete Components

#### *Conventional/Site Constructed Buildings*

"Conventional Construction" refers to buildings that are built with basic or elementary construction materials and factory fabricated products and components. Assembly and coordination of materials and components is generally done on-site in response to specific building design and project conditions.

Traditional Materials, those that are widely accepted and used throughout the construction industry, are normally implied for use in conventional construction.

Innovative/Nontraditional Materials and methods may also be introduced into otherwise conventional construction processes. These are materials or methods that depart from commonly accepted practices in order to achieve improved results. Such



innovations may include the materials' composition, engineering and applications, or installation methods.

### *Modular Building Systems*

"Modular Construction" refers to buildings constructed with volumetric sections designed to be factory-fabricated, transported to the site, and joined together with a minimum of site labor. Building modules are generally complete when they arrive at the site, with most structural, enclosure, and partitioning elements, interior finishes, and mechanical, plumbing, and electrical items installed.

Wood-Frame Modular Construction is the construction of buildings with volumetric elements that use dimensional lumber and forest products as the primary structural and construction materials. The most common examples are single-family and low-rise, multi-family residential buildings and small-scale commercial and institutional buildings.

Metal-Frame Modular Construction is the construction of buildings with volumetric elements that use light-gauge metal framing components as the primary structural materials. The most common examples are single-family and low-rise, multi-family residential buildings and small-scale commercial and institutional buildings.

Precast Concrete Modular Construction is the construction of buildings with volumetric elements that use precast or prestressed concrete elements as the primary structural material and, most often, as the enclosure materials. The most common examples of concrete modular construction are mid- and high-rise multi-family residential and small- to mid-scale commercial and institutional buildings.

### *Pre-Engineered Building Systems*

Pre-engineered building systems refer to buildings constructed with prefabricated components that are designed, engineered, and produced as a coordinated assembly of elements within a prescribed set of parameters standard for that building system. These components most frequently include a building's superstructure, enclosure, and often many elements of interior space division. All components are designed, engineered, produced, and supplied from a single source.

Pre-Engineered Metal Building Systems use a steel superstructure or framing system along with coordinated metal roofing and exterior wall components. Interior construction components are often included in the building system. Frequently, conventional building materials are used in lieu of metal exterior wall components. The rest of the building is constructed by conventional means. The most common uses of pre-engineered metal building systems are for commercial, institutional, and industrial building types.

Precast Concrete Building Systems use prestressed or precast concrete as the main structural and construction material. A concrete building system most often consists of structural components (beams, columns, slabs, and load-bearing wall components), exterior wall panels, and other items such as stairs and architectural accessories. Interior partitions are normally included only where they function as load-bearing elements. The rest of the building is constructed by conventional means. The most common uses of precast concrete building systems are for mid- and high-rise multi-family housing, and for commercial, institutional, and industrial applications.

### *Component Construction*

Component construction refers to buildings that use prefabricated components for some or many of their major elements. These components are generally not "pre-engineered" within a set of prescribed parameters, but are designed, engineered, and fabricated on a project-specific basis. Different components may be provided by different sources. Use of components within an otherwise conventionally constructed building is quite common.

Wood-Frame Components are prefabricated components that use dimensional lumber and forest products as their primary material. The most common wood-frame components are roof and floor trusses, wall panels, and other accessories, such as stairs. Wood-frame components are most often used in residential and small-scale commercial construction.

Metal-Frame Components are prefabricated components whose primary material is light-gauge metal-framing components. The most common metal-frame components are roof and floor trusses, wall panels, and other accessories, such as stairs. Metal-frame components are most often used in low- or mid-rise multi-family residential and small-scale commercial or institutional construction.

Precast/Prestressed Concrete Components are prefabricated components made up of mostly precast or prestressed concrete. The most common concrete components are beams, columns, roof and floor slabs, wall panels, and other accessories, such as stairs and architectural elements. Precast concrete components are used in nearly all building types, but are used infrequently in single-family residential construction.

### **Alternative Construction Technology Feasibility Assessment**

The above-defined alternative construction technologies have been evaluated individually to determine their compatibility or responsiveness to Army requirements for building child development centers. Critical building characteristics were identified paralleling those used in evaluating proprietary child care facilities in Chapter 5 (Tables 1 through 5). Army requirements were identified and the responsiveness of the generic technology assessed for each building characteristic listed. Except for the wood-frame systems, all technologies identified should be responsive to Army requirements. Results of that assessment are summarized here by generic definition. Appendix A (Tables A1 through A3) gives the complete analyses of compatible technologies.

#### *Wood-Frame Modular Construction*

Due to the combustibility of the primary structural and building materials, no wood-frame system is or can be made to be responsive to current Army requirements. The Army requires the use of noncombustible construction equivalent to the Uniform Building Code (UBC) Type II-N. This construction type allows no combustible materials in any of the major building elements: structure, exterior wall bearing or nonbearing, interior wall bearing or nonbearing, roof, floor, and exterior doors and windows. The use of fire-retardant-treated wood in construction was considered; however, for Type II-N construction, UBC allows fire-retardant-treated wood to be used only in nonbearing interior partitions where they are fire-rated. Wood-framing members could therefore be used in areas of the building having rated walls and still meet the code requirements (e.g., hazard separation walls, corridor walls, child activity grouping separation walls, etc.); however, this would still not allow wood-frame modular systems to be responsive.

Such systems could be made responsive by changing the Army's required construction type from UBC Type II-N to UBC Type III-1 Hr, while not sacrificing occupants' safety. Such a system would correspond to most of the proprietary facilities that are built of combustible materials. Building and child care center licensing codes do not normally limit the construction type for one-story centers of the size that the Army anticipates, but specify the life-safety requirements for the type of construction selected.

In all other aspects, wood-frame modulars are identical in responsiveness to metal-frame modular systems.

#### *Metal-Frame Modular Construction*

The main limitation in using any type of modular system is the dimensional compatibility of the volumetric modules with the space requirements of the facility to be constructed. DA child development centers require a wide range of spaces, from small spaces such as storage or toilet rooms, medium-sized enclosed spaces such as motor activity and music rooms, through large open or clear areas such as home bases. The typical modular systems available can be dimensionally responsive to these requirements.

Typical modules are 12 ft\* wide and 60 ft long. They often have open-frame steel structural systems consisting of columns in combination with roof and floor decks; however, some combine open-frame with bearing-wall construction in key locations to accommodate lateral loads. Facilities are made up of combinations of modules selected and configured to satisfy the total space and functional requirements.

Metal-frame modular systems have no difficulty accommodating small interior spaces, since they are normally constructed by erecting nonbearing walls within the "construction module" or the dimensions of the basic volumetric unit. Mid-sized spaces, for which the minimum room dimension from Army requirements is 12 ft, may be harder to accommodate. They are often accommodated by partitions placed on the construction module lines, which would result in interior clear room dimensions of about 11 ft, 4 in. To achieve interior room dimensions of 12 ft, it is possible to prefabricate wider modules, which is less convenient, or alternatively, to erect the interior walls off the construction module lines. Another possibility would be to adjust the Army criteria for minimum room dimensions to more conveniently accommodate modular construction applications. Open areas are easily accommodated by placement of successive adjacent open-framed modules as required. This may cause some columns to intrude on interior spaces; however, Army design guidance does not indicate that this is a detriment if care is exercised in their placement. To the contrary, it states that columns can help in spatial definition by making spaces more interesting to the children.

Although interior finishes are typically provided complete with the modules, there should be no difficulty in meeting Army requirements. Finishes are normally specified by the users and provided to meet their requirements. Care should be taken in specifying and evaluating interior finishes to ensure acceptable materials and quality.

\*Metric conversion factors are provided on p 99.

### *Precast Concrete Modular Construction*

No concrete systems were considered due to their comparatively high cost. However, in most other aspects, the responsiveness of precast concrete modular construction would be identical to that of metal-frame modular systems.

For metal-frame modular systems, the main limitation is the dimensional compatibility of the volumetric modules with the space requirements of the facility to be constructed. Concrete modules are typically smaller due to span and shipping limitations, with dimensions of 8 to 11 ft wide by 24 to 32 ft long. They typically consist of concrete columns combined with precast concrete joist and beam roof and floor assemblies; however, some may combine this open frame with bearing wall construction to accommodate lateral loads. Facilities are made up of combinations of modules selected and configured to satisfy the total space and functional requirements.

Concrete modular systems can easily accommodate small interior spaces, since they are normally built by erecting nonbearing walls within the "construction module" or the dimensions of the basic volumetric unit. Mid-sized spaces, whose minimum required room dimension is 12 ft, may be harder to accommodate. Often partitions are placed on the construction module lines, which produce interior clear-room dimensions of about 7 to 10 ft. To achieve interior room dimensions of 12 ft, it is possible to prefabricate wider modules; however, this is less convenient. For concrete modules, it would be more feasible not to limit the placement of interior walls to the construction module lines, but rather to place all interior nonbearing partitions where required within the construction module to meet space and functional requirements.

Concrete modular systems are usually provided with flat-roofed configurations, making them nonresponsive to Army requirements for a gabled-roofed residential appearance. Gabled roofs are possible by modifying the modules or by adding separate roofing systems on top of the modules; however, such solutions are not preferred.

Other aspects of concrete module responsiveness are identical to those of metal-frame module systems.

### *Pre-Engineered Metal Building System*

Pre-engineered metal building systems are the most adaptable to the special and functional requirements of DA child development centers because of the way they are designed; these systems use prefabricated components that are designed, engineered, and produced as a coordinated assembly of elements within a prescribed set of parameters. These components, although limited to predetermined dimensions and capabilities, are most like conventionally designed framing systems. Limitations are in the area of desired aesthetics when a standard pre-engineered metal building package is considered.

The Army indicates certain residential scales, configurations, and material selections as being the most appropriate for child development centers. Package metal building systems normally include the basic steel structural framing system, a preformed standing seam metal roofing system, and a preformed and finished metal exterior wall system. Normal roof slopes are low slope, with the highest slopes typically 4 in.:12 in. Interior partitions are normally excluded and separately site-erected to user requirements.

Pre-engineered metal building systems can accommodate a residential scale as easily as conventional construction by using low eave heights and smaller building

masses. Most residential configurations can be provided, although roof slopes would be limited primarily to 4 in.:12 in. Although higher slopes are possible, they are not preferred. Residential-type wall finish selections, such as brick, clapboard siding, or stucco, are not normally part of a standard building package. Some producers provide standard metal panels with textured aggregate finishes similar in appearance to wood siding, and other similar options may be available; however, to achieve the desired exterior aesthetics, the exterior wall system or finishes may be separately site-erected to user requirements. Standing seam metal roofing can be compatible with a residential image if the color and rib spacings/panel profiles are selected carefully.

#### *Precast Concrete Building System*

As noted previously, concrete systems are not cost-competitive. In most other aspects, the responsiveness of precast concrete building systems, like the precast concrete module systems, would be identical to that of pre-engineered metal building systems.

Like pre-engineered metal building systems, the designs of precast concrete building systems allow them to adapt easily to the spatial and functional requirements of DA child development centers. Although limited to predetermined dimensions and capabilities, the pre-engineered components are most like those of conventionally designed framing systems. Limitations are in the area of desired aesthetics when a standard precast concrete building systems package is considered.

In terms of the Army's requirements for residential scales, configurations, and material selections, package concrete building systems normally include the basic concrete structural framing system, precast concrete roof structure and deck, and a precast exterior wall system. Normal roof slopes are flat or very low. Interior partitions are normally excluded and separately site-erected to user requirements.

Precast concrete building systems can achieve residential scale and configurations as easily as conventional construction through smaller building masses and low roof heights; however, most other aspects of the residential image are harder to attain. Most systems are limited to flat-roofed configurations which could be detailed to provide a residential appearance; however, it would be nonresponsive to Army requirements for gabled roof configurations. Residential-type wall finish selections, such as brick, clapboard siding, or stucco, are not normally provided as part of a standard building package, since most exterior walls are concrete-bearing walls incorporated into the basic structural system. Finishes would be limited mainly to aggregate or textured concrete surfaces in various configurations, selected and finished to achieve an appearance similar to that of a residence. To achieve the desired exterior aesthetic when the exterior wall is not an integral part of the structural system, the exterior wall system or finishes may be site-erected separately to user requirements.

#### *Wood-Frame Components*

As noted previously, the combustibility of wood-frame materials makes them nonresponsive to Army requirements. (See the section on Wood-Framed Modular Construction.) In all other aspects, the responsiveness of wood-frame components is identical to that of metal-frame components systems.

### *Metal-Frame Components*

Component construction (construction using prefabricated components which are designed, engineered, and fabricated on a project-specific basis for some or many of a building's major elements) is, by definition, totally compatible with and responsive to Army requirements for constructing DA child development centers. There are no limitations inherent in the approach; a proposer would simply prepare a prefabrication plan to meet the specified project requirements. Establishment of requirements and concept designs should not preclude the use of a component approach.

### *Precast/Prestressed Concrete Components*

In all aspects except cost-competitiveness with other systems, precast/prestressed concrete component construction is identical in responsiveness to metal-frame component construction.

### **3 GUIDANCE FOR IMPLEMENTING SELECTED STRATEGIES FOR CONSTRUCTING CHILD CARE CENTERS**

DAAG-DPC should approach OCE for coordination and assistance in the selecting of an individual project or group of projects to test the procurement of a DA child development center using the One-Step process. Following project selection, the Child Development Coordinators and the DEHs/FEs of the appropriate installation should coordinate with the appropriate Corps District to prepare the procurement documentation and execute the procurement.

#### **Basic One-Step Project Execution Process**

The following steps make up the One-Step project execution process:

1. Evaluation of the DA child development center program and selection of a project or projects appropriate to a One-Step approach.
2. Assembly of project requirements, development of performance specifications, and production of the RFP by the Corps District or contracted Architect/Engineer (A/E).
3. Solicitation of proposals from the construction community by an RFP.
4. Development of designs, technical proposals, and bids by the proposers and their submittal to the District.
5. Evaluation of proposals on the basis of quality and cost.
6. Award of the construction contract to the proposal with the best cost/quality ratio or best overall point score (best value to the Government).
7. Completion of construction documents and commencement of construction by the successful proposer/contractor.

#### **Project Initiation**

Project initiation activities are simply initial steps in executing any project, and for One-Step, will differ little from conventional MCA projects; however, the One-Step approach requires more direct involvement by the user, and this starts during project initiation. For the DA child development centers, the users (the Installation Child Development Coordinators) and their installation engineering representative (FE/DEH) will coordinate with the appropriate Corps District to begin the project.

Once the design directive is received, the District will initiate project activities. These will involve: (1) gathering complete design criteria and data; (2) deciding to prepare RFP documentation in- or out of house (most often it will be done out of house by an A/E); (3) establishing preliminary project scheduling; and (4) advertising, selecting, negotiating, and awarding a contract with a selected A/E. It is important during this phase that the Child Development Coordinator (CDC) help the District gather and identify all project requirements to ensure their incorporation into the RFP package. The user is also normally invited to participate in the A/E selection process, and has a vote on the A/E Selection Board. Participation is recommended to ensure that user criteria for A/E capabilities and experience are incorporated into the selection process.

## **Request for Proposal (RFP) Development**

The RFP is the bidding document used to solicit proposals for facility design and construction from the construction community in a One-Step procurement. The District, or normally an A/E firm under contract with the District, generates a facility design program and associated criteria instead of a conventional definitive design. The RFP normally consists of (1) contractual requirements, often referred to as "boiler plate," that explain the "rules of the game" to prospective proposers, (2) facility design and technical solutions, prepared by an A/E, that describe the product required, and (3) evaluation criteria, also normally prepared by an A/E, that explain the basis on which the proposals will be judged.

Once an A/E is under contract with the District and all predesign data gathered, the RFP may be developed. Major activities during this phase will include: (1) a predesign meeting between the District, the CDC, and the selected A/E; (2) preparation, review, and completion of the RFP and associated evaluation documentation; and (3) selection of an evaluation team and preparation for evaluation.

The user's responsibility during the RFP development phase is to confirm that all project requirements have been provided to the District for incorporation into the RFP package and that the facility concept designs and technical requirements contained in the RFP represent those requirements. More information must also be provided to identify the relative importance of the various project requirements which will be used to establish evaluation criteria, point scores, and weights. A predesign conference should be held when this phase begins to confirm agreement on project requirements and to ensure that all parties know their roles and responsibilities in the proposed procurement.

The District or contracted A/E will prepare the RFP and evaluation documents based mainly on project-specific functional requirements as specified by the users, the concept designs offered in the Draft DG 1110-1-143, requirements stated in AR 608-10, Engineering Instructions issued by OCE applicable to the particular program year, and other referenced documents. The RFP should be prepared and submitted in at least two phases: concept and final. User representatives should actively participate in any interim RFP and evaluation document reviews to confirm incorporation of project requirements.

User representatives should also participate in proposal evaluation. They will normally include, as a minimum, the installation CDC and a representative from the appropriate Army Major Command. Active participation by the CDC during the RFP development phases will help him/her understand user responsibilities and activities during the evaluation phase.

## **Proposal Development**

During the proposal development phase, proposers develop technical solutions and bids in response to contractual requirements and technical and evaluation criteria identified in the RFP. Although the proposer will do most of the work during this phase, some activities may be done by the District and user to prepare for later phases.



The main activities during this phase will include (1) issuance of the RFP, (2) holding of a preproposal conference with prospective proposers, District, and user representatives, and (3) receipt of the proposals.

A preproposal conference is held within a few weeks of the initial RFP advertisement. This will allow prospective proposers to meet with District and user representatives in order to better understand the project requirements and the procurement procedures. This meeting, which will offer a forum for the detailed explanation of project requirements, will reduce the amount of clarification required later. A pre-evaluation conference is also normally held during this phase to acquaint evaluation team members with the evaluation documentation, procedures, and project requirements. Proposals are submitted at the end of this phase.

### **Evaluation and Award**

In the One-Step evaluation process, each proposal is examined to ensure its conformity to specified RFP requirements; its technical proposal and bid price are rated to establish its relative position against the other proposals, and based on the documented results, a selection and recommendation for award is then made. This process is critical to successful execution, because it is the only way to determine which proposal is most advantageous to the Government. It must be executed objectively and consistently to ensure fairness to all proposers in making a selection and to be justifiable in terms of procurement regulations that apply.

The evaluation process is normally divided into four areas: (1) general conformity, (2) proposer responsibility, (3) technical conformity, and (4) scoring evaluation. The reviews for technical conformity and proposer responsibility are normally done by the District's Procurement and Supply Division upon receipt of the proposals. The technical conformity review is normally done by staffing proposals to appropriate elements within the District's Engineering Division. The scoring evaluation should be done by a team of representatives from the using agency and the District. Participants may include representatives from the appropriate Major Command, OCE, the Corps Division, the District resident engineer, and the FE/DEH. If a pre-evaluation meeting has not been held during the proposal preparation period, it should normally be held just before the scoring evaluation.

The evaluation process is governed by an evaluation manual prepared at the outset of the project in conjunction with RFP preparation. This manual is intended primarily to (1) guide the evaluators through the evaluation process, (2) provide structure and organization to the process, and (3) document the evaluation proceedings. Evaluation manuals will typically include: (1) introductory information on the project, the procurement strategy, and the evaluation process, (2) specific instructions for carrying out each evaluation step and task, (3) complete evaluation criteria and associated possible quality points, and (4) the necessary evaluation forms and worksheets.

The actual scoring evaluation, structured by the manual and worksheets, is a straightforward process of checking and scoring elements of the proposals against the applicable evaluation criteria. User representatives normally review only their specific areas of expertise, scoring aesthetic or functional criteria. Point scores are then summarized and any comments or recommendations documented. Resulting scores will be provided along with comments to the selection board for review, and a cost/quality ratio set. The established ratios and all comments are reviewed, and a selection and

recommendation for award forwarded to the District Contracting Officer for consideration.

If proposals are deemed insufficient as initially submitted, and the rejection of proposals would result in less than adequate competition, the Government may allow proposers to adjust their submissions. If this occurs, negotiations will be required with all proposers. Following negotiations, final adjustments are made to evaluation scores, cost/quality ratios, and a selection and recommendation for award forwarded to the District CO.

#### **Contract Execution/Administration**

Following contract award, the successful proposer or contractor may begin work. Final construction documents will be prepared by the contractor, and submitted for review by the District; following approval, construction may begin. It is recommended that the user participate in design/construction reviews. RFP technical submittals are primarily "Concept Designs," and may not be definite enough to ensure incorporation of all user requirements. This will be the final opportunity to effect changes in the design prior to construction. Except for preparation of the final construction documents, which are the contractor's responsibility, the construction phase of a One-Step procurement is much like that of conventional MCA. To expedite construction, completion of the final documents should be phased so that some portions of the work may begin before approval of final documents on later phases. The District should carry out the rest of the project activities, which include quality assurance and other construction contract administrative functions.

#### **4 SURVEY OF PROPRIETARY CHILD CARE ORGANIZATIONS AND DATA DISPLAY PROCEDURES**

##### **Methodology**

When the study began, DA needed information on the facility standards of proprietary child care organizations to support ongoing Congressional Committee testimony. Since this need was immediate, it was impossible to execute an extensive survey covering a wide range of child care organizations. Therefore, an informal limited telephone survey of headquarters personnel was taken at five of the most prominent national organizations of the child care industry. When the initial survey was completed, sufficient data had been obtained for only two organizations: Children's World and Kinder-Care. This information was provided to DA in a series of "information papers." Field visits were then made to one selected center of both Children's World and Kinder-Care and interviews conducted with their staffs.

Following the initial survey, DA requested that more complete information on the facility standards of the initial five organizations be obtained through an expanded formal written survey. The survey would provide information about the facilities and their programs at the national level and was to be conducted at specific centers (not yet visited) to obtain information on actual cases. Based on input from DA, the initial survey was modified to place higher emphasis on life safety, building codes and standards, and facilities construction cost. More information was also needed on proprietary use of alternative construction and acquisition methods, so the Army could evaluate the use of similar techniques. Other minor modifications were made throughout the initial survey. Both a written headquarters survey and an oral center survey were developed.

The headquarters survey requested information from the national organizations to present their "general" or national average case and their facilities and programs preferences. (Appendix B provides survey content and format.) It requested information about the organization's basic background, its operational requirements, its typical facilities and program offerings, and its facilities construction costs. Detailed information on facilities standards and space allowances was also requested for comparison to Army facilities planning criteria.

The center survey, which was essentially identical to the headquarters survey, requested information from the specific center visited. This information was to substantiate and supplement the data provided by the national headquarters, and was also representative of the "best" or most current proprietary facilities. This survey requested information on the facility's life safety and licensing requirements and on points of contact with the appropriate approval authorities. The site visit also allowed facility floor and site plans to be measured.

The surveys were distributed and arrangements made for visits with center personnel after coordination with the proprietary organization headquarters. After the surveys, time was allowed for followup telephone contacts with appropriate organizational personnel to clear up any inconsistencies and questions and to complete entries where there were omissions. In most cases, center personnel could not answer detailed questions about facility costs, building construction code requirements, and actual construction details. These questions were referred to appropriate headquarters personnel for response, or state or local code authorities were contacted.

## Information Display

Chapter 5 provides the information acquired on proprietary child care organizations and their facilities. For each organization, a brief verbal description summarizes the information obtained; Tables 1 through 5 and Figures 1 through 5 display detailed data for each organization (Appendix C shows the basic table format.) Tables display survey data in two primary columns: column 1 shows central headquarters/national data, and column 2 shows data on the specific center visited. Column 1, Headquarters/National Data, is normally subdivided into two areas: the average or general cases versus the preferred cases; column 2 displays statistics for the center visited. Comments are provided to the immediate right of many of the entries. The figures show site and floor plans and illustrate the character of the facilities' interior spaces and exterior images. The tables also show other data as described in the following:

1. Central Headquarters/Selected Child Care Center: Provides the headquarters and center addresses, principal points of contact, and dates of survey data. Footnotes identify additional personnel contacted.

2. Organizational Background: Identifies the scope of organizational operations.

Column 1: Lists the numbers of centers, new centers, and states in which centers are located. (Lists of centers and the states of operation were requested, but not always provided.)

Column 2: Identifies the date of center opening.

3. General Facility Characteristics: Generally identifies facility characteristics.

Column 1: Lists the approach to construction, typical center sizes, plan configuration, and capacities. Capacities are expressed in terms of the child care licensing capacities versus designed capacities for children. Facility capacity (adults and children) with respect to life safety requirements was also considered, and these factors far exceeded those for licensing capacities. There was generally no expressed preference for a specific facility size, with most organizations adjusting sizes to meet local licensing and market demands.

Column 2: Lists the same information as column 1; but is for the actual center. Capacities are expressed in terms of the actual enrollment on the day of the survey versus the child care licensing capacity.

4. Operational Requirements: Generally identifies the organization's program offerings.

Column 1: Lists the services offered, schedules, and population mix for the children served. Generally, no preference is identified for these items; most organizations adjust their programs to meet local market demands. Space provisions in Net and Gross Square Feet, the Age Group Definitions, Care-Giver Ratios, Group Sizes, and staffing are also listed, but are governed mostly by code. Age group definitions were obtained and compared as closely as possible with Army definitions. Care-Giver Ratios, Group Sizes, and Child Population mix are expressed by the organizations' age definitions. Some preferences are expressed where code-required provisions were very low.

Column 2: Lists the same information is listed as column 1, but for the actual center. Net and Gross Square Footages per Child are based on the appropriate measured facility areas divided by the actual licensed capacity.

5. Facilities Requirements: Identifies life safety and building construction code criteria of the facilities' design/construction.

Column 1: Lists safety criteria paralleling Army requirements. Although preferences were requested, organizations generally indicated that designs conform to local code requirements.

Column 2: Lists the same information as for column 1, but for the actual center. When information was not available from center personnel, it was obtained from organizational headquarters, code and licensing officials, and actual codes that applied to the specific facility.

6. Facilities Costs: Identifies facilities costs broken out by building, site work, playground, site, and facility total. Items included in the cost groupings are identified. Costs are displayed as provided by the facility; no attempt was made to translate lump sum figures into costs per gross square foot. Back-up facility cost experience was requested but generally not provided.

7. Alternative Construction and Acquisition Techniques: Identifies the alternative construction and acquisition techniques currently used by the proprietary organizations.

8. Facility Functional Requirements: Identifies facility space provisions for program spaces, nonprogram spaces, and outdoor spaces. Spaces for which facility space provisions are listed correspond directly to Army-defined spaces in Draft DG 1110-3-143. Program spaces are limited to secondary activity areas, since all organizations indicated that they provided the same primary activity spaces as the Army and that primary (net square feet/child) space provisions were as required by code.

Column 1: Lists criteria and space allowances. Although this information was requested from the headquarters, it was usually unavailable.

Column 2: Lists the same information as for column 1, but for the actual center.

9. Footnotes: Provides additional information as required to supplement information displayed in the tables. Typically, this includes additional organizational personnel contacted during the study, a listing of all the states and the numbers of child care centers/state, points of contact with code and licensing authorities responsible for the centers visited, and detailed facility cost experience, if provided.

## 5 PROPRIETARY CHILD CARE ORGANIZATIONS FACILITIES DATA

### Children's World, Inc.

Children's World, founded in 1969, now has 140 operating centers in 20 states and is the fourth largest of the national organizations surveyed. Although Children's World is a mid-sized firm compared to Kinder-Care, the industry giant, it has placed corporate emphasis on quality education and has earned the respect of child care advocates. Its competitors refer to it as the "Cadillac" of the industry, in terms of both development programs and facilities. Children's World has proven that quality care can be profitable. Centers have maintained an occupancy rate between 73 and 83 percent in an industry where 65 percent is considered the break-even point and 70 percent the level where profit starts.

Child centers are centrally operated from Children's World corporate offices in Evergreen, CO, through various regional offices. Centers are typically clustered around key metropolitan areas. Although centrally operated, Children's World allows its center operators to direct their own educational programs. The central organization seeks trained personnel with compatible educational philosophies and avoids program standardization.

Initially, Children's World operated out of leased facilities, all individually acquired and different. They began constructing their own facilities in 1980, using a number of approaches, but continue with a mix of lease and construction for facility acquisition and operation. Some centers are built by developer-owners, who construct facilities according to Children's World plans. For others, Children's World acts as a developer and arranges a sale-leaseback on the completed facility.

Children's World buildings are designed to standards refined through the organization's past experience. Emphasis is on serving the child's needs through appropriate design. Attention is given to scale, layout, and decor to stimulate the senses. Flexibility is built in to accommodate the individuality of educational practices. Design refinements have also led to some construction economies.

Design and construction practices are conventional. A conventional design-bid-build practice is followed whether Children's World is acting as a developer or facilities are designed to its standards by a developer. Facilities are designed by an outside agent, one at a time, following established standards to meet the needs of a given/selected market.

The basic plan (see Figure 1) of a center is five classrooms wrapped around a central core of administration and support spaces. The entry and lobby/reception area are centrally situated on one side of the facility. The administration office and reception desk are straight ahead of the entry, with classrooms to the immediate left and right. A corridor, which wraps around the core spaces, leads to the other classrooms in an "L" configuration, avoiding the long tunnel effect of a double-loaded corridor. Two classrooms are directly adjacent to toilet facilities. The remainder must access the toilets through the corridor, but travel distance is only 4 to 10 ft. Each classroom has direct exits to the outside, most of which lead to their own designated fenced play areas. The mechanical space for the California facility was accessible to the outside and

was being used to store outdoor play equipment. Since the facility had no laundry, the mechanical space was also the planned location of future laundry equipment.

Facility capacity usually ranges from 80 to 140 children, depending on the market demands in a given area. Centers are residential in scale, configuration, and finishes to provide a home-like atmosphere for children. The center visited (located in Chino, CA) was made up of a series of intersecting shed-roofed elements which created a very pleasing residential scale and image. The facility was clad both in vertical wood siding and stucco, had wood trim around aluminum windows, and was roofed with asphalt shingles. Materials used were normally of residential or light commercial quality and durability. Walls were gypsum board over wood or metal studs throughout.

In classroom areas, Children's World has carried the carpet up the wall to form a wainscoting trimmed with a wood band. The wainscot, combined with carpeting over three-fourths of the classroom floor and acoustical suspended ceilings, makes the classroom environment very quiet compared to some centers visited. Toilet walls are protected by tile to about chest height and floors are also tiled. Except for the director's office, all other areas are floored in sheet vinyl.

Table 1 summarizes the data for the Children's World Organization.

Table 1

## Children's World, Inc., Data Summary

<u>CENTRAL HEADQUARTERS</u>		<u>SELECTED CHILD CARE CENTER</u>
Evergreen North Center P.O. Box 2290 Evergreen, Colorado 80439		6010 Riverside Drive Chino, California 91710
Mrs. Katie Geuin 303/674-6686 17 August 1984	-Additional personnel contacted (1)	Ms. Marian Shuck, Center Director 714/591-0473 or 0477 22 June 1984
<u>NATIONAL ORGANIZATION DATA (Average and Preferred)</u>		<u>CENTER DATA (Actual)</u>
<u>ORGANIZATIONAL BACKGROUND</u>		
-CENTERS IN OPERATION:	140	DATE OF OPENING: August 1983
-NEW CENTERS IN 1984:	20	
-STATES OF OPERATION:	20	
-List attached (2)		
<u>GENERAL FACILITY CHARACTERISTICS</u>		
<u>DESIGN CONSTRUCTION APPROACH:</u>		
-STANDARD (or) INDIVIDUAL DESIGNS		
SIZES:	(Average / Preferred)	STANDARD
-CENTER(SF)	5K-6K SF / 5K-6K SF	(Actual)
-PLAY YARD(SF)	15,000 SF / 15,000 SF	7,200
-SITE(SF)	32,000 SF / 32,000 SF	18,400
PLAN ARRANGEMENTS PROVIDED:		54,000
(Average / Preferred)		(Actual)
-CLOSED CLOSED		CLOSED
-SINGLE STORY SINGLE STORY		SINGLE STORY
-CHILDREN TOILETS		
CENTRAL AND INDIVIDUAL/CENTRAL	-Toddlers individual	CENTRAL AND INDIVIDUAL
AND INDIVIDUAL		classrooms, some not.
CENTER CAPACITY:		(Actual / Licensed)
-MAXIMUM OCCUPANCY	(Licensed / Design)	90 / 136
-CHILDREN	80 - 140 / 80 - 140	



Table 1 (Children's World, Inc., Cont'd)

OPERATIONAL REQUIREMENTS	
SERVICES: (Provided / % of Program)	(Provided / % of Program)
-FULL DAY / NP	FULL DAY / 71%
-PART DAY	PART DAY
-PRESCHOOL AGE / NP	PRESCHOOL AGE / 23%
-AFTER SCHOOL / NP	AFTER SCHOOL / 6%
-DROP IN (HOURLY) / NP	DROP IN (HOURLY) / 0%
-WEEK END / NP	-Service provided but rarely used.
SCHEDULE: (Average / Preferred)	(Actual)
-DAYS/WEEK Mon-Fri / Mon-Fri	Mon - Fri
-HOURS/DAY	Varies / Varies
	0630 - 1830
PARTICIPATE IN USDA FOOD PROGRAM	
(Average / Preferred)	(Actual / Code)
NET SF/CHILD: 35-50 / 35-50	37 / 35
CROSS SF/CH: (Average / Preferred)	(Actual / Code)
-INDOORS Varies / Varies	53 / NS
-OUTDOORS 70-75 / 70-75	135 / 75
AGE GROUPINGS: (Definition)	(Definition)
-INFANT 6 wks - 1 yr	0 - 2 yrs
-TODDLER 1 - 2 1/2 yrs	2 - 3 yrs
-PRESCHOOL AGE 2 1/2 - 5 yrs	3 - 4 yrs
	4 - K
-SCHOOL AGE 5 - 12 yrs	K+
CARE GIVER RATIOS:	(Actual / Code)
(Average / Preferred)	1:4 / 1:4
-INFANT Code / 1:3	1:12 / 1:12
-TODDLER Code / 1:5	1:12 / 1:12
-PRESCHOOL AGE Code / 1:7	1:12 / 1:12
-SCHOOL AGE Code / 1:5	1:12 / 1:12
	-Licensing Code: Title 22 California Statutes
	-POC: (3)

Table 1 (Children's World, Inc., Cont'd)

MAXIMUM GROUP SIZE:		(Actual / Code)
-INFANT	(Average / Preferred) Code / Code	16 / NS
-TODDLER	Code / Code	36 / NS
-PRESCHOOL AGE	Code / Code	36 / NS
-SCHOOL AGE	Code / Code	36 / NS
		12 / NS
POPULATION MIX:		(Actual # / Z)
-INFANT	(Average 2 / Preferred 2) 10% / 10%	12 / 132
-TODDLER	10% / 10%	24 / 272
-PRESCHOOL AGE	65% / 65%	24 / 272
-SCHOOL AGE	15% / 15%	24 / 272
		6 / 62
STAFF (#):		(Actual)
-DIRECTOR	(Average / Preferred) 1 / 1	1
-CLERICAL	1 / 1	2
-CARE GIVERS	18-22 / 18-22	-Part time -10 full time/2 part time
-COOK	1 / 1	12
-GARDNER	Contract / Contract	1
		CONTRACT 1 GARDENER
FACILITIES REQUIREMENTS		
LIFE SAFETY:		(Actual / Code Requirement)
-AREA LIMITS(SF)	(Minimum Criteria) Code	7,200 / 9,100 (TYPE V), 13,500 (TYPE III)
-EXITS	Code	6 / 2
-#s/AREA	Code	5 / 0
-DIRECT FROM CLASSROOM	Code	5' / 6'
-EXIT ACCESS CORRIDOR WIDTH(FT)	Code	-"Actual" exits include one remote exit and one in each of 5 classrooms.

Table 1 (Children's World, Inc., Cont'd)

(Minimum Criteria)		(Actual / Code Requirement)	
-FIRE PROTECTION	Code	NR /	NR
-STRUCTURE(HKS)	Code	NA /	NA
-AREA SEPARATION(HKS)	Code	NA /	NA
-EXITWAYS(HKS)	Code	1 /	1
-HAZARD SEPARATION(HKS)	Code	1 /	1
-EXIT ACCESS CORRIDOR(HKS)	Code	NR /	NR
-PARTITION(N-BEARING)(HKS)	Code	NR /	NR
-ROOF (HKS)	Code	(see note)/(see note)	
-INTERIOR FINISH(CLASS)	Code	0 /	NR
-SPRINKLER	Code		
		-if no exits directly from classrooms -Classrooms: Class III Corridors: Class II; UBC Chapter 42 -Designed with 1-hour "core" which includes walls around the kitchen, reception area, mechanical room, janitor closet, and exit access corridor.	
-ALARM SYSTEM PROVIDED:	Code	Actual / Code Requirement	
-TO FIRE STATION		Not Provided / NR	
-INTERNAL		INTERNAL/INTERNAL	
-MANUAL		MANUAL/ NS	
-AUTOMATIC		AUTOMATIC / AUTOMATIC	
-SMOKE DETECT	NP	SMOKE DETECT / NS	
-CODE		1982 UBC	
		-Code Administration: San Bernardino County Bldg. Dept. 714/383-1417	
-CONSTRUCTION TYPE PROVIDED:	NP	(Actual / Code Requirement)	
		-TYPE-V / NS	
		(Provided For Adults / Children)	
		RAMPS/RAMPS	

Table 1 (Children's World, Inc., Cont'd)

-ADDITIONAL CIRC/ADDITIONAL CIRC (Average / Preferred)	(Actual)
-CORR WIDTH(FT) 4'-0" / 4'-0"	5'-0"
-DOOR WIDTH(IN) 36" / 36"	36"
<u>FACILITIES COSTS</u>	
\$/GROSS SF: (Average / Planning)	(Actual)
-BUILDING \$50-70 / \$50-70	257,000
-SITE WORK Varies / Varies	96,000
-PLAY GROUND Varies / Varies	18,000
-SITE Varies / Varies	170,000
-TOTAL FACIL Varies / Varies	541,000
-INCLUDED IN ABOVE BUILDING COST:	
-BUILDING	-Lump Sum
-FIXED FURNITURE & EQUIPMENT	-Lump Sum
-MOVEABLE FURNITURE & EQUIPMENT	-Lump Sum
-LOAN COSTS	-Lump Sum <i>approximation</i>
-INCLUDED IN ABOVE SITE WORK COSTS:	
-GRADE WORK	BUILDING
-OFF STREET IMPROVEMENTS	FIXED FURNITURE & EQUIPMENT
-GUTTERS, CURBS	
-DRAINAGE RETENTION	MASONRY PERIMETER WALL (\$17,000)
	CONSTRUCTION STAKING
	SITE DEMOLITION
	CURBS & GUTTERS
	PAVING (ASPHALT & CONCRETE)
	LANDSCAPING
	IRRIGATION
	FENCING
	FLAG POLE
	EQUIPMENT
-INCLUDED IN ABOVE PLAY GROUND COSTS:	
-EQUIPMENT	
-GROUND COVERINGS	

## ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES

## CONVENTIONAL COMPETITIVE BID

(None Identified)

**CABINETS**  
**ROOF TRUSSES**

(None Identified)

## FACILITY FUNCTIONAL REQUIREMENTS

## PROGRAM SPACES

**PRIMARY ACTIVITY SPACES PROVIDED:**

Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DC 1110-3-143).

SECONDARY ACTIVITY SPACES PROVIDED:  
( / Included in NET Space)

or (if excluded / Space Allowance)

-EATING / Included

**-NAPPING / Included**

-CRIB / Included

~DIAPER STATION / N1'

$$-\text{TOILETS}(\text{CH}) / \text{NI}'$$

**-CUBBIES / NP**

-CLASSROOM RECEIPT/CANCEL NP

teacher area provided in classroom.

## NON PROGRAM SPACES

## ADMINISTRATION SPACE PROVIDED:

( / Space Allowance)

--WAITING-RECEIPT NI' NI'

**-OFFICES / NI'**

-STAFF LOUNGE / N1'

### CENTRAL STORAGE

**-ISOLATION AREA**

**-ADULT TOLLERS**

// Actual Space Provided)

WAITING-RECEIPT / 230 ST

OFFICES / 230 SF

STAFF LOUNGE : 0

CENTRAL STOR / 140 SF

ISOLATION AREA / 0

ADULT TOILETS / 40 ST

Space in Director's Office

**Normally single unisex**

toilet for Adults/Staff.

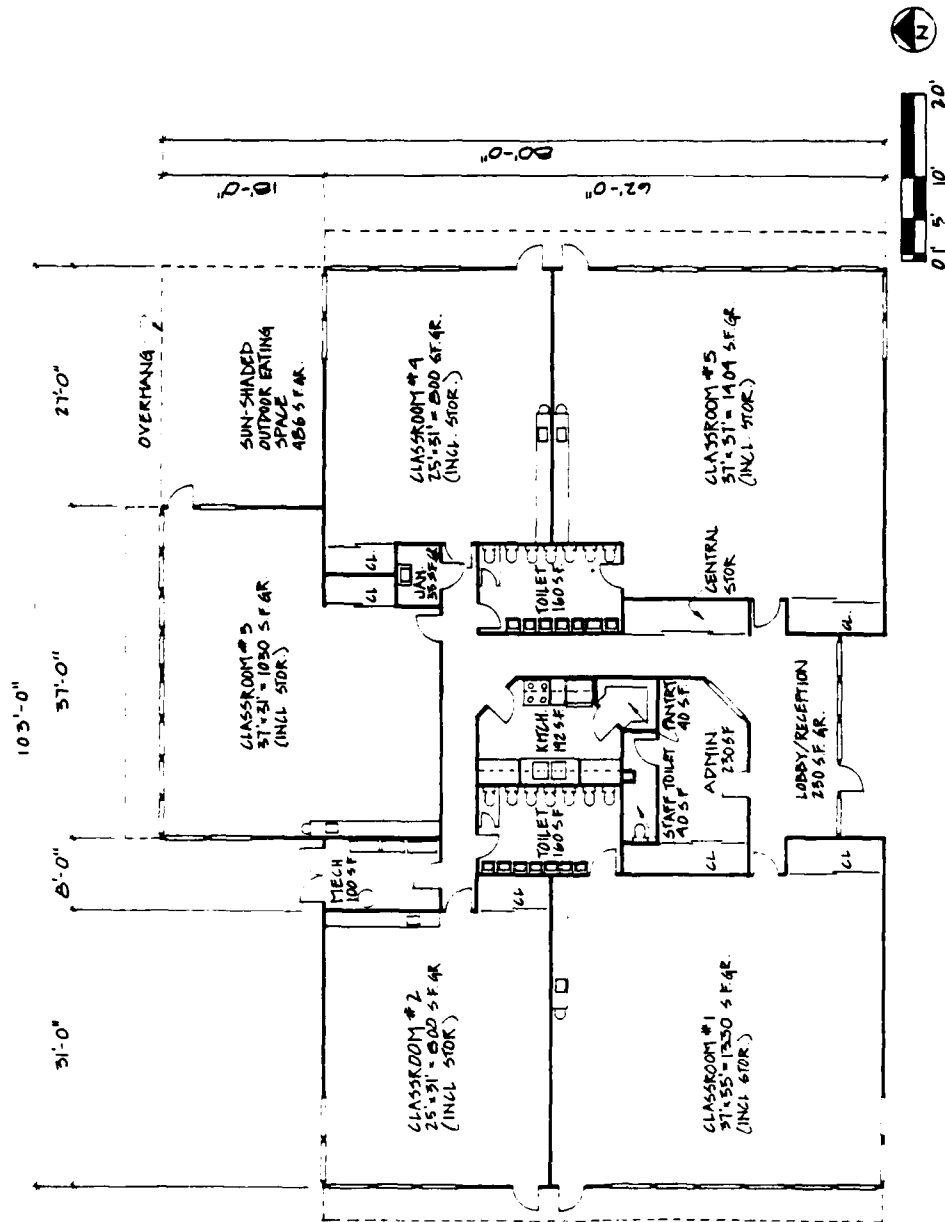
Table 1 (Children's World, Inc., Cont'd)

SUPPORT SPACES PROVIDED:	
( / Space Allowance)	
-KITCHEN / NP	( / Actual Space Provided)
-LAUNDRY / NP	KITCHEN 197 SF
-MAINT/JANITOR / RE	MAIN JAN TOR 35 SF
-MECH/ELECT / NP	MECH/ELECT 100 SF
-PANTRY / NP	PANTRY 40 SF
OTHER NON ASSIGNABLE SPACE PROVIDED:	
( / Space Allowance)	
-CORRIDORS / NP	( / Actual Space Provided)
	-CORRIDORS 390 SF
	CLASSROOM STORAGE 100 SF
OUTDOOR SPACES	
PRIMARY OUTDOOR ACTIVITIES SPACES PROVIDED:	
( / Space Allowance)	
-PORCHES/DECKS / NP	( / Actual Space Provided)
-PLAY YARDS / NP	PORCHES/DECKS 486 SF
-OUTDOOR STORAGE / NP	PLAY YARDS 18,400
	OUTDOOR STORAGE NP
	Space available in deck area, room which is accessible from outside play area.
SECONDARY OUTDOOR AREAS PROVIDED:	
( / Space Allowance)	
-PORTE CHOCHERE / NP	( / Actual Space Provided)
-PEDEST WALKS / NP	PORTE CHOCHERE 80 SF
-VEHIC CIRC / NP	PEDEST WALKS / As required
-SERVICE AREA & DRIVE / NP	VEHIC CIRC 18,600 est. -Includes parking for 30 cars.
	SERVICE AREA & DRIVE / 30 cars.
	(Incl. above)
	-Access only through

(1) Mr. Kenneth Ledderman, Architect, CA, 714/837-3977  
 Mrs. Susan Howell, Regional Director, CO, 303/792-3626  
 Mrs. Ana Salameh, Regional Director, CA, 818/339-1281

(2) States of Operation and Number of Centers/State: CA-7, CO-27, DC-5, IL-8, MI-14, MN-19, OH-7, TX-20, WA-7. (These data from old stockholders reports, 1982, do not reflect current situation. Current data not provided.)

(3) Deputy Director, Community Care Licensing Div., Dept. of Social Sciences, 744 P Street, Mail Station 17-17, Sacramento, CA 95814, 916/322-8538



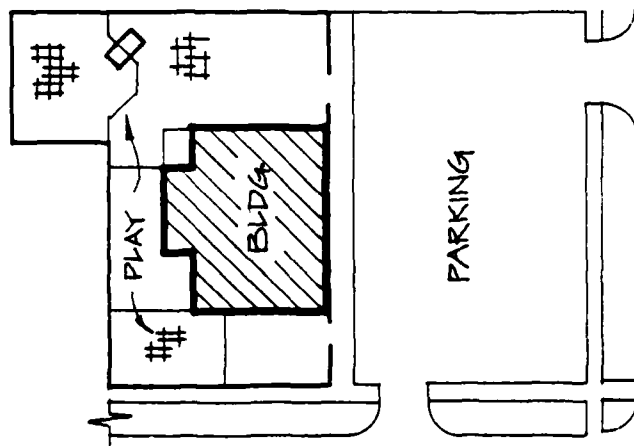
CHILDREN'S WORLD, Inc.  
Chino, CA

Licensed Capacity: 136 Children  
Gross Square Footage: 7,200 sq ft or 53 sq ft/child

NOTE:  
Exterior dimensions exact.  
Critical major interior dimensions measured  
Many minor dimensions/spaces sizes/  
configured from sketches/pictures (+ 5% var.).

a. Floor plan.

Figure 1. Children's World, Inc.



b. Site sketch.



c. Entry perspective



d. Typical play equipment

Figure 1. (Children's World, Inc., Cont'd)



### **Day-Bridge Learning Centers, Inc.**

Day-Bridge, until recently known as National Child Care Centers, Inc., is headquartered in Houston, TX. It is the third largest of the child care organizations surveyed, having 152 centers operating in 12 states. It also has the third most aggressive expansion campaign, with 25 new centers anticipated in 1984.

Day-Bridge follows a conventional design-bid-build process using a standard design that has evolved from its construction experience. The design is modified to meet specific site and local code requirements. Construction contracts are normally competitively bid or negotiated with a selected contractor. Day-Bridge has experience with construction management techniques, having used them on some of its larger centers. In these cases, a construction management firm advertised and negotiated bids for subcontracts for building the centers and then managed/supervised the construction. No prefabrication techniques are used in the facilities except for roof trusses, joists, and cabinetry.

Day-Bridge's standard facility design (see Figure 2) is an approximate square closed plan of one story. Toilet, administration, and support areas are centrally located; this arrangement divides the facility into classroom areas in each of the four corners. The entry, reception/waiting, and administration areas are centered on one side of the square plan and separate two of the classroom areas; the kitchen is central to the square, and toilets separate the other classroom areas. Interior classroom spaces are subdivided by equipment and furnishings. Centers are normally flat-roofed with a false metal-clad mansard to screen rooftop mechanical equipment and provide an overhang for window shading and weather protection. The center entry has a roof extension which serves as a covered drive-up/drop-off area. Exterior materials are normally brick wall facings, with aluminum windows and entryway. The basic structure is normally wood-frame construction; however, light-gauge metal framing is substituted, if necessary, to meet local code requirements.

Facility interiors typically have materials, finishes, and equipment of light commercial or residential quality. Walls are gypsum board over wood or metal studs throughout. Toilet rooms have walls tiled to waist height and tiled floors. In the rest of the facility, floor finishes are about 50 percent sheet vinyl and 50 percent carpeted, with the vinyl placed in the shared activity/gross motor activity areas.

Table 2 summarizes the data obtained for Day-Bridge Learning Centers, Inc.

**Day-Bridge Learning Centers, Inc., Data Summary  
(Previously: National Child Care Centers, Inc.)**

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Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)

CENTER CAPACITY:		
-MAXIMUM OCCUPANCY	(Licensed / Design)	
-CHILDREN	152-200/160	
	(Actual / Licensed)	-Since this is a new center, actual occupancy is expected to increase significantly.
	69 / 130	
<u>OPERATIONAL REQUIREMENTS</u>		
SERVICES: (Provided / % of Program)		(Provided / % of Program)
-FULL DAY	60%	FULL DAY / 45%
-PART DAY		PART DAY
-PRESCHOOL AGE / 10%		-PRESCHOOL AGE / 13%
-AFTER SCHOOL / 20%		-AFTER SCHOOL / 35%
-DROP IN (HOURLY) / 10%		DROP IN (HOURLY) / 7%
SCHEDULE: (Average / Preferred)		(Actual)
-DAYS/WEEK	Sun-Sat / Mon-Fri	Mon - Fri
-HOURS/DAY	0630-1830 / 0630-1830	0600 - 1830
PARTICIPATE IN USDA FOOD PROGRAM		
NET SF/CHILD: (Average / Preferred)		(Actual / Code)
	Code / Code	45 / 35
GROSS SF/CH: (Average / Preferred)		(Actual / Code)
-INDOORS	25-35 / 35	64 / NS
-OUTDOORS	Code / 75	93 / 75
AGE GROUPINGS: (Definition)		(Definition)
-INFANT	0-18m	6 weeks - 15 mos
-TODDLER	18m - 2 yr	15 mos - 2 yrs
-PRESCHOOL AGE	2 yr - 5 yr	2 yrs
-SCHOOL AGE	5 yr - 12 yr	3 yrs
		4 yrs
		5 yrs
		-Licensing Code: (2)
		-POC: (3)
		-To accommodate at least 25% of licensed building capacity (code minimum).

Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)

CARE GIVER RATIOS:		(Actual / Code)
-INFANT	1:5 / 1:4	1:4 / 1:4
-TODDLER	1:9 / 1:7	1:5 / 1:5
-PRESCHOOL AGE	1:15 / 1:10	1:8 / 1:8
-SCHOOL AGE	1:26 / 1:15	1:10 / 1:10
		1:10 / 1:10
		1:20 / 1:20
MAXIMUM GROUP SIZE:		(Actual / Code)
-INFANT	TX 25 / 12	14 mix / 12
-TODDLER	TX 25 / 20	8 / 15
-PRESCHOOL AGE	TX 25 / 30	20 / 20
-SCHOOL AGE	TX 25 / 30	20 / 20
		25 / 25
POPULATION MIX:		(Actual # / %)
-INFANT	NP/NP	3 / 5%
-TODDLER	NP/NP	4 / 6%
-PRESCHOOL AGE Predominant		8 / 12%
-SCHOOL AGE	NP/NP	8 / 12%
		17 / 27%
		24 / 38%
STAFF(#):		(Actual)
-DIRECTOR	1 / 1	1
-CARE GIVERS	25 / 25	9
-COOK	1 / 1	1
-JANITOR	1 / Contract	CONTRACT
-ASSIST DIRECTOR	1 / 1	
-BUS DRIVER	2 / 2	1

-14 for mixed infants and toddlers

-Also an aide listed above.

Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)

FACILITIES REQUIREMENTS		(Actual / Code Requirement)	
LIFE SAFETY: (Minimum Criteria)	Code	7,200	21,600
-AREA LIMITS(SF)			
-EXITS	Code		
-0s/AREA	1	6	2
-DIRECT FROM CLASSROOM	1	5	1
-EXIT ACCESS CORRIDOR WIDTH(FT)	6'-0"	6'	6'
-FIRE PROTECTION			
-STRUCTURE(HRS)	1 hr	NP	NS
-AREA SEPARATION(HRS)	NA	NP	NS
-EXITWAYS(HRS)	1 hr	NP	NS
-HAZARD SEPARATION(HRS)	1 hr	NP	1
-EXIT ACCESS CORRIDOR(HRS)	1 hr	NP	0
-PARTITION(N-BEARING)(HRS)	Code	NP	NS
-ROOF (HRS)	Code	NP	NS
-INTERIOR FINISH(CLASS)	A	NP	I,III
-SPRINKLER	Code	Total Bldg/ NS	
-ALARM SYSTEM PROVIDED:		(Actual / Code Requirement)	
-TO FIRE STATION		TO FIRE STATION/ NR	
-INTERNAL		INTERNAL/INTERNAL	
-MANUAL		MANUAL/ NR	
-AUTOMATIC		AUTOMATIC/AUTOMATIC	
-SMOKE DETECT		-Heat sensors in kitch/jan cls, SMOKE DETECT/SMOKE DETECT smoke detectors throughout	
-CODE	UBC, Southern, BOCA	BOCA 1975, Orland Park Public Services, 312/349-5430	
-CONSTRUCTION TYPE PROVIDED:		(Actual / Code Requirement)	
-TYPE-II	BOCA/UBC 11-1 hr - Noncombustible	TYPE IV (BOCA) / NS	
BARRIER FREE ENVIRONMENT:		(Provided For Adults / Children)	
-TOILETS/TOILETS	{ Provided For Adults / Children	TOILETS/Not provided	
-RAMPS/RAMPS	(Average / Preferred)	RAMPS/RAMPS	
-CORR WIDTH(FT)	6'-0" / 6'-0"	(Actual)	
-DOOR WIDTH(IN)	36" / 36"	6'	
		36"	

Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)

FACILITIES COSTS			
\$ GROSS SF:	(Average / Planning)	-Back-up cost data (4)	(Actual)
-BUILDING	\$38-47K / \$41.50		343,162
-SITE WORK	\$70-104K / \$85,000		92,482
-PLAY GROUND	\$11-13K / \$11,000		12,000
-SITE	\$98-154K / \$100,000		108,850
-TOTAL FACIL	\$405-567K / \$540,450		556,494
-INCLUDED IN ABOVE BUILDING COST:			
-BUILDING			BUILDING
-FIXED FURNITURE & EQUIPMENT			LOAN COSTS
-PERMITS			
-INCLUDED IN ABOVE SITE WORK COSTS: NP			
-GRADING			UTILITIES
-UTILITIES			PAVING
-ENGINEERING			LANDSCAPING
-PAVING			FENCING
-LANDSCAPING			
-INCLUDED IN ABOVE PLAY GROUND COSTS:			
-EQUIPMENT/MATERIALS			EQUIPMENT
			SURROUNDING RETAINERS
ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES			
TYPES OF CONTRACTS PROVIDED:			
CONVENTIONAL, COMPETITIVE BIDS			
ALTERNATIVE BUILDING CONSTRUCTION METHODS UTILIZED:			
(None Identified)			
PREFABRICATED BUILDING COMPONENTS PROVIDED:			
-CABINETRY			
CONSTRUCTION MANAGEMENT:			
-Construction Manager, Woodson Development, obtained subcontractors through competitive bid process. Not a predominant process procedure.			
(None Identified)			
CABINETS			

**Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)**

**BUILDING ELEMENTS/MATERIALS PURCHASED IN VOLUME:**

-APPLIANCES  
-PLAYGROUND EQUIPMENT  
-CARPET  
-CABINETRY

FIXTURES  
CABINETS  
PLAYGROUND EQUIPMENT  
APPLIANCES

**FACILITY FUNCTIONAL REQUIREMENTS**

**PROGRAM SPACES**

**PRIMARY ACTIVITY SPACES PROVIDED:**

-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DG 1110-3-143).

**SECONDARY ACTIVITY SPACES PROVIDED:**

(/ Included in NET Space)

or (if excluded / Space Allowance)

-EATING / Incl

-NAPPING / Incl

-CRIB / Incl

-DIAPER STATION / NP

-TOILETS(CH) / NP

-CUBBIES / NP

-CLASSROOM RECEPTION/CARE / NP

(/ Actual Space Provided)

EATING / Included

NAPPING / Included

CRIB / Included

DIAPER STATION / Included

TOILETS(CH) / 4 @ 58 + 1 @ 42 = 274 SF

CUBBIES / Included

CLASSROOM RECEPTION/CARE / Included

**NON PROGRAM SPACES**

**ADMINISTRATION SPACES PROVIDED:**

(/ Space Allowance)

-WAITING-RECEPTION / NP

-OFFICES / NP

-CENTRAL STOR / NP

-ISOLATION AREA / NP

-ADULT TOILETS

(/ Actual Space Provided)

WAITING-RECEPTION / 195 SF

OFFICE / 95 SF

CENTRAL STOR / 93 SF

ISOLATION AREA / 53 SF

ADULT TOILETS / 36 SF -Staff/Unisex

**SUPPORT SPACES PROVIDED:**

(/ Space Allowance)

-KITCHEN / NP

-LAUNDRY / NP

-MAINT/JANITOR / NP

-PANTRY / NP

-MECH/ELECT / NP

(/ Actual Space Provided)

KITCHEN / 155 SF

MAINT/JANITOR / 34 SF

PANTRY / 38 SF

MECH/ELECT / 54 SF

**Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)**

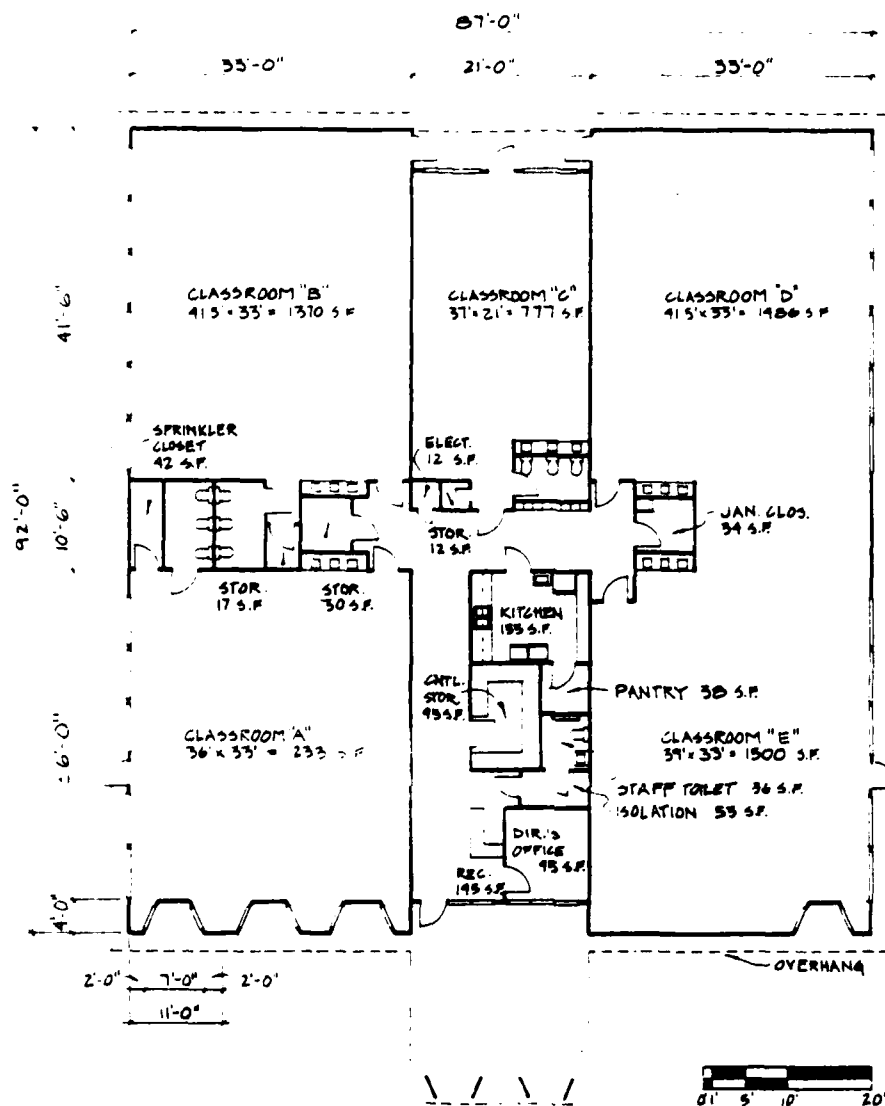
OTHER NON ASSIGNABLE SPACE PROVIDED: (/ Space Allowance)	
-CORRIDORS / NP	(/ Actual Space Provided) CORRIDORS / 381 SF CLASSRM. STORAGE / 117 SF SPRINKLER CLOSET / 37 SF
<u>OUTDOOR SPACES</u>	
PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED: (/ Space Allowance)	
-PLAY YARDS / NP	(/ Actual Space Provided) PORCHES/DECKS / 2,850 -Concrete pads (unprotected) PLAY YARDS / 12,075 -Includes above
SECONDARY OUTDOOR AREAS PROVIDED: (/ Space Allowance)	
-PORTE CHOCHERE / NP	(/ Actual Space Provided) PORTE CHOCHERE / 315 SF
-PEDEST WALKS / NP	PEDEST WALKS / 405 SF
-VEHIC CIRC / NP	VEHIC CIRC / 11,025 SF -includes 19 parking spaces SERVICE AREA & DRIVE / Included above
(1)Mr. Gerry Mazera, HQ, Dir, Office of Real Estate, TX, 713/578-4808. Wilson Thibodeaux, HQ, Real Estate Div., TX, 713/578-4808 Ms. Henrietta Stainbrook, HQ, Operations Div., TN, 901/761-4504 Ms. Beverly Senese, District Manager, IL, 312/379-4990	
(2)Licensing Standards for Day Care Centers, Part 407, Subchapter "e": Text of Adopted Rules.	
(3)Chief of Licensing, Division of Program Operations, Department of Children and Family Services, 1 N. Old State Capitol Plaza, Springfield, IL 62706, 217/785-2598.	
(4)See attached.	



**Table 2 (Day-Bridge Learning Centers, Inc., Cont'd)**

Day-Bridge Facility Cost Experience - All Centers Opened August 1984

	Site Cost	Building Cost	Site Development	Playground	Total Cost
#1507, Illinois	130,215	314,521	97,719	11,000	553,455
#1503, Illinois	130,800	321,816	96,084	11,000	559,700
#1517, Illinois	126,110	314,561	114,539	11,000	556,210
#1520, Illinois	98,605	325,851	133,500	11,000	568,956
#1801, Minnesota	102,752	320,379	100,834	11,000	534,965
#1802, Minnesota	111,276	318,785	85,314	11,000	526,375
#1803, Minnesota	104,480	318,791	80,709	11,000	514,980
#1804, Minnesota	102,559	318,793	75,667	11,000	508,019
#1805, Minnesota	128,600	335,791	91,172	11,000	566,563
#1809, Minnesota	101,000	319,916	96,908	11,000	528,824
#1810, Minnesota	111,968	319,899	90,381	11,000	533,248
#1811, Minnesota	99,967	319,634	88,706	11,000	519,307
Average Cost / # of Total	112,361/21%	320,728/59%	95,961/18%	11,000/2%	538,384



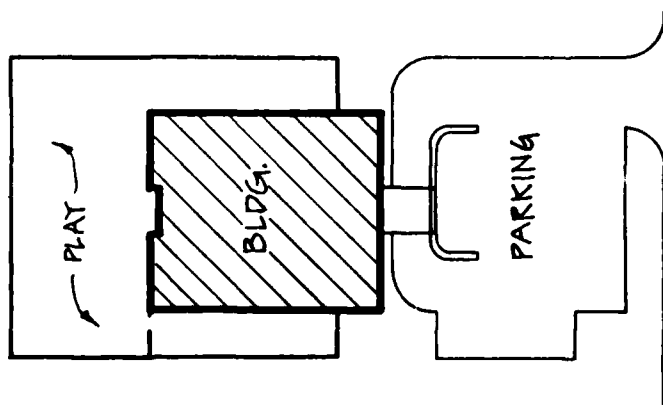
DAY-BRIDGE LEARNING CENTERS, INC.  
 Orland Park, IL  
 Licensed Capacity: 130 Children

Gross Square Footage 8,273 sq ft or  
 64 sq ft/child

NOTE: Exterior dimensions exact.  
 Critical major interior  
 dimensions measured.  
 Many minor dimensions/  
 spaces/sized/configured  
 from sketches/pictures  
 (+ 5% var.).

a. Floor plan.

Figure 2. Day-Bridge Learning Centers, Inc.



b. Site sketch.



c. Typical classroom.



d. Rear elevation.

Figure 2. (Day-Bridge Learning Centers, Inc., Cont'd)

## **Gerber Children's Centers, Inc.**

Gerber, having 57 centers operating in six states, is the smallest of the national organizations surveyed. It is a wholly owned subsidiary of Gerber Products Company, with headquarters in Fremont, MI. It has the least aggressive construction program, currently projecting fewer than 10 new centers in 1984, and seems to approach development in a very "relaxed" manner. Its program varies by facility, depending on the market demand; however, it does have a preference in program offerings. Its operations have commanded the respect of child care experts who are normally suspicious of "for profit" child care chains.

Gerber's approach to designing and constructing its facilities is a conventional design-bid-build approach. The volume of its construction program does not warrant its direct involvement in the design and construction process; also, no great cost advantages are gained from alternative facility construction approaches. It uses no facility prefabrication methods and does not volume-purchase building supplies or equipment. It has developed a standard plan based on previous construction experience which is modified to meet local requirements. A local designer modifies the standard plan for the local situation and prepares construction documentation. Construction contracts are advertised, bid, and awarded in the conventional manner. Any innovative construction methods used are solely the decision of the construction contractor.

The basic plan of a Gerber center (see Figure 3) is an equal-armed cross with classrooms at the ends of three arms and the administration support space at the end of the fourth arm, radially arranged around a "great room" or central large motor area. There are two large classroom spaces, which are dividable by operable partitions, and one smaller classroom. The "great room" is exclusive of the net square footage requirements of the licensing code, and serves for many joint uses other than classroom activities. Besides gross motor activities, the "great room" is used for napping, eating, and cubbies.

A Gerber center's capacity usually ranges from 100 to 120 children; however, 100 is the preferred capacity. Centers are residential in scale and finished to provide a more friendly environment for the children. Gabled roofs with a cross-shaped plan result in intersecting gables that emphasize the residential image and scale. Materials are residential or light commercial in quality and durability. The Florida center visited was a single-story structure with gabled roofs and vertical wood siding. Carpet is the predominant floor finish material, especially in the great room and classroom areas; sheet vinyl is used in wet areas. Walls are gypsum board on wood or light-gauge metal studs throughout. In activity spaces, walls are wainscotted to waist height with a durable plastic laminate. Most of the equipment is movable and provided separately; however, some play equipment is often built in. The Florida center had a large climbing and play structure built in to the "great room."

Table 3 summarizes data obtained for the Gerber centers.

Table 3

Gerber Children's Centers, Inc., Data Summary

<u>CENTRAL HEADQUARTERS</u>	<u>SELECTED CHILD CARE CENTER</u>
445 State Street Fremont, MI 49412	2597 Oak Street Jacksonville, FL 33204
Mr. Richard McKinnon Director, Real Estate 616/928-2813 13 July 1984	Ms. Evelyn Belcher Center Director 904/387-3136 13 July 1984
-Additional personnel contacted (1)	
<u>NATIONAL ORGANIZATION DATA (Average and Preferred)</u>	<u>CENTER DATA (Actual)</u>
<u>ORGANIZATIONAL BACKGROUND</u>	DATE OF OPENING: November 1982
-CENTERS IN OPERATION: 57 -NEW CENTERS IN 1984: 8 -STATES OF OPERATION: CA-16, OH-13 FL-12, MI-8, NY-5, IL-3	
<u>GENERAL FACILITY CHARACTERISTICS</u>	<u>STANDARD DESIGN</u>
<u>DESIGN/CONSTRUCTION APPROACH:</u> -STANDARD DESIGNS	
SIZES: (Average / Preferred) -CENTER(SF) 6,242 / 4,820 -PLAY YARD(SF) 10,650 / 7,500 -SITE(SF) 32,670 / 32,670	(Actual) 4,820 15,000 25,000
<u>PLAN ARRANGEMENTS PROVIDED:</u> (Average / Preferred)	(Actual) CLOSED SINGLE STORY
-CLOSED/CLOSED -SINGLE STORY/SINGLE STORY -CHILDRENS TOILETS INDIVIDUAL/INDIVIDUAL	INDIVIDUAL
	-Shared; between 2 classrooms
	-This center shares parking and track w/adjacent hospital reducing space requirements (sizes approximate)

Table 3 (Gerber Children's Centers, Inc., Cont'd)

CENTER CAPACITY:	
-MAXIMUM OCCUPANCY (CHILDREN)	(Actual / Licensed)
-CHILDREN	106 / 125
OPERATIONAL REQUIREMENTS	
SERVICES: (Provided / 2 of Program)	
-FULL DAY / Varies	FULL DAY / 852
-PART DAY	PART DAY
-PRESCHOOL AGE / Varies	PRESCHOOL AGE / 142
-AFTER SCHOOL / Varies	DROP IN (HOURLY) / 12
-WEEK END / Varies	-All after school program may be provided in the future.
SCHEDULE: (Average Preferred)	
-DAYS/WEEK	Mon-Fri
-HOURS/DAY	0630-1800
NET SF/CHILD:	
	(Actual / Code)
	21 / 20
GROSS SF/CH:	
-INDOORS	(Actual / Code)
-OUTDOORS	39 / NS
	120 / 45
AGE GROUPINGS:	
-INFANT	(Definition)
-TODDLER	INFANT 6 wks-1 yr
-PRESCHOOL AGE	TODDLER 1-2 yrs
	INTERMEDIATE I 2-3 yrs
	INTERMEDIATE II 3-4 yrs
	JUNIOR 4-5 yrs
-SCHOOL AGE	
CARE GIVER RATIOS:	
	(Actual / Code)
-INFANT	1:5 / 1:6
-TODDLER	1:7 / 1:8
-PRESCHOOL AGE	INTERMEDIATE I 1:10 / 1:12
	INTERMEDIATE II 1:12 / 1:15
-SCHOOL AGE	JUNIOR 1:15 / 1:20
	-Min. based on 50% of licensed capacity.
	-Licensing Code: (2)
	-POC: (3)

Table 3 (Gerber Children's Centers, Inc., Cont'd)

MAXIMUM GROUP SIZE:		(Average / Preferred)	(Actual / Code)
-INFANT	Code / Code		8 / NS
-TODDLER	Code / Code		16 / NS
-PRESCHOOL AGE	Code / Code		24 / NS
-SCHOOL AGE	Code / Code		24 / NS
			30 / NS
POPULATION MIX:		(Average 1 / Preferred 2)	(Actual # / %)
-INFANT	12 / 12		12 / 11%
-TODDLER	12 / 12		16 / 15%
-PRESCHOOL AGE	64 / 64		24 / 23%
-SCHOOL AGE	12 / 12		24 / 23%
			30 / 28%
STAFF(#):		(Average / Preferred)	(Actual)
-DIRECTOR	1 / 1		1
-CLERICAL	Varies / 1/3		1
-CARE GIVERS	Code / Code		16
-COOK	1 / 1		1
-JANITOR	Contract / Contract		Contract

FACILITIES REQUIREMENTS		(Actual / Code Requirement)
LIFE SAFETY:	(Minimum Criteria)	
-AREA LIMITS(SF)	Code	4820 / NS
-EXITS		
-#s/AREA	Code	6 / 2
-DIRECT FROM CLASSROOM	Code	1 / NS
-EXIT ACCESS CORRIDOR WIDTH(FT)	Code	6' / NS

- "Actual" number includes one direct exit from each classroom and one remote exit; thus two exits per classroom.

Table 3 (Gerber Children's Centers, Inc., Cont'd)

-FIRE PROTECTION	(Minimum Criteria)	(Actual / Code Requirement)
-STRUCTURE(HRS)	Code	NP / NS
-AREA SEPARATION(HRS)	Code	NA / NA
-EXITWAYS(HRS)	Code	NA / NA
-HAZARD SEPARATION(HRS)	Code	NP / NS
-EXIT ACCESS CORRIDOR(HRS)	Code	NP / NS
-PARTITION(N-BEARING)(HRS)	Code	NP / NS
-ROOF (HRS)	Code	NP / NS
-INTERIOR FINISH(CLASS)	Code	NP / A,B
-SPRINKLER	Code	1 Classroom/Required
-Means of egress; A, B, or C throughout facility -Classroom "C" is sprinkler due to proximity to back property line		
-ALARM SYSTEM PROVIDED:	Code	(Actual / Code Requirement)
-TO FIRE STATION		INTERNAL/INTERNAL
-INTERNAL		MANUAL/MANUAL
-AUTOMATIC		AUTOMATIC/AUTOMATIC
-SMOKE DETECT		SMOKE DETECT/SMOKE DETECT
-CODE	BOCA, UBC & NFPA	Chapter 4A-36 of the Florida Administrative Code Min. Stds. for Life Safety & Fire Prevention in Child Care Facilities
-CONSTRUCTION TYPE PROVIDED:		(Actual / Code Requirement)
-TYPE-II		NP / NS
-TYPE-III		-All types permitted for single-story centers, except infants are not approved for unprotected wood frame structures.
-Predominant		
BARRIER FREE ENVIRONMENT:		(Provided for Adults/Children)
		TOILETS/ Not Provided
		RAMPS/RAMPS
-Handicapped access provided but awkward.		
		(Actual)
-CLEAR WIDTH (FT)		6'-0"
-DOOR WIDTH (IN)		36"



Table 3 (Gerber Children's Centers, Inc., Cont'd)

FACILITIES COSTS			
\$/GROSS SF:	(Average Planning)	-Backup cost data requested	(Actual)
-BUILDING	\$39-41	was not provided.	NP
-SITE WORK	NP NP		NP
-PLAY GROUND	NP NP		\$8,700
-SITE	NP NP		NP
-TOTAL FACIL	NA NA		\$208,000
-INCLUDED IN ABOVE BUILDING COST:			
-BUILDING		-Gerber has no loan costs since they have in-house financing.	BUILDING
-FIXED FURNITURE & EQUIPMENT			
-INCLUDED IN ABOVE SITE WORK COSTS:			
-PAVING			ASPHALT
-LANDSCAPING			GRADING
-STORM SEWERS			LANDSCAPING
-INCLUDED IN ABOVE PLAY GROUND COSTS:			
-EQUIPMENT			DEMOLITION
			EQUIPMENT (\$7,200)
			LABOR (\$1,500)
ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES			
TYPES OF CONTRACTS PROVIDED:			
-CONVENTIONAL DESIGN BID-BUILD			NEGOTIATED BID
ALTERNATIVE BUILDING CONSTRUCTION METHODS UTILIZED:			
-COMPONENT CONSTRUCTION			COMPONENT CONSTRUCTION
-WOOD FRAME			WOOD FRAME
PREFABRICATED BUILDING COMPONENTS PROVIDED:			
-ROOF TRUSSES		-Up to contractor	ROOF TRUSSES
-CABINETRY			CABINETRY
			PANELLED MAINSCOATING
BUILDING ELEMENTS MATERIALS PURCHASED IN VOLUME:			
-APPLIANCES			APPLIANCES
-PLAYGROUND EQUIPMENT			EQUIPMENT

-Lump Sum  
-Site leased est \$40,000 value  
-Lump Sum  
-Figure inflated due to unforeseen site conditions.

Table 3 (Gerber Children's Centers, Inc., Cont'd)

FACILITY FUNCTIONAL REQUIREMENTS

PROGRAM SPACES

PRIMARY ACTIVITY SPACES PROVIDED:

-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army Guidance (DC 1110-3-143).

SECONDARY ACTIVITY SPACES PROVIDED:

(/ Included in NET Space)

or (if excluded / Space Allowance)

-EATING / Included

-NAPPING / Included

-CRIB / Included

-DIAPER STATION / NP

-TOILETS(CH) / NP

-CUBBIES / NP

-CLASSROOM RECEPTION/CARE / NP

(/ Actual Space Provided)

EATING / Included

NAPPING / Included

CRIB / Included

DIAPER STATION / 2 @ 16 SF = 32 SF

TOILETS(CH) / 2 @ 40.5 SF + 1 @ 27 SF

CUBBIES / Included

CLASSROOM RECEPTION/CARE / Included

GREAT ROOM / 840 SF

-The "great room" is a

central indoor motor

skills/play area

which also contains

"cubbies."

NON PROGRAM SPACES

ADMINISTRATION SPACES PROVIDED:

(/ Space Allowance)

-WAITING-RECEPTION / NP

-VESTIBULE / NP

-OFFICES / NP

-STAFF LOUNGE / NP

-CENTRAL STORAGE / NP

-ISOLATION AREA / NP

-ADULT TOILETS / NP

(/ Actual Space Provided)

WAITING-RECEPTION / 83 SF + 60 SF = 143 SF

OFFICES / 161 SF (Center Director's)

STAFF LOUNGE / 77 SF

CENTRAL STOR / 44 SF

ISOLATION AREA / (77 SF)

ADULT TOILETS / 22 SF

-Combined w/ staff lounge

-Single unisex toilet

-Normally single unisex

toilet for staff and

parents.

SUPPORT SPACES PROVIDED:

(/ Space Allowance)

-KITCHEN / NP

-LAUNDRY / NP

-MAINT/JANITOR / NP

-MECH/ELECT / NP

-PANTRY / NP

(/ Actual Space Provided)

KITCHEN / 108 SF

LAUNDRY / 30 SF

ELECT / 7.5 SF

PANTRY / 36 SF

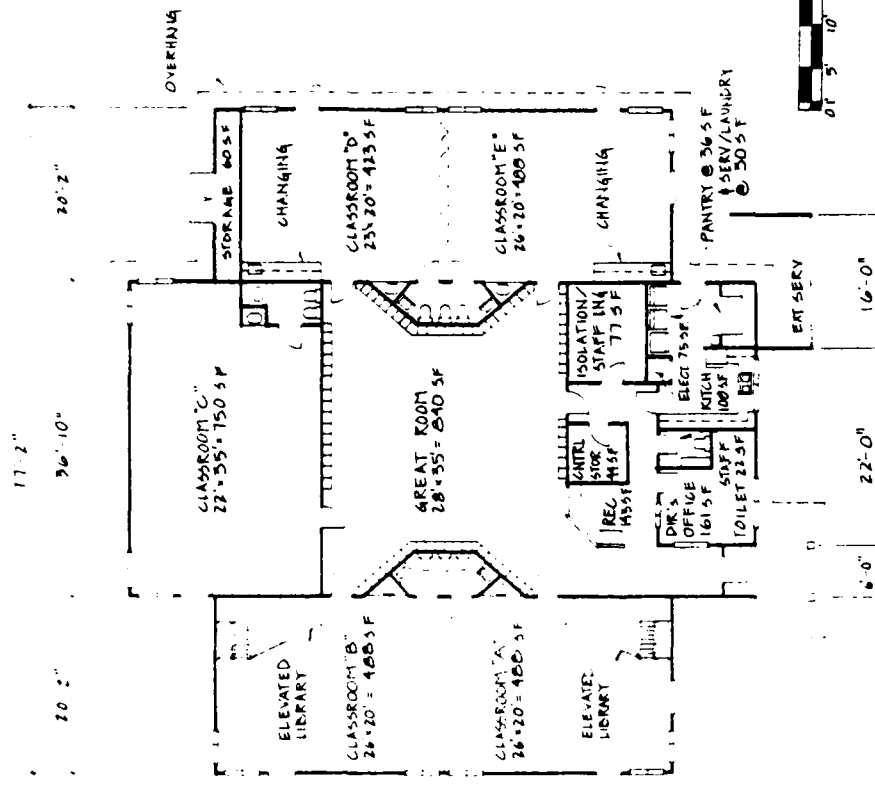
Table 3 (Gerber Children's Centers, Inc., Cont'd)

OTHER NON ASSIGNABLE SPACE PROVIDED:	
( / Space Allowance)	( / Actual Space Provided)
-CORRIDORS / NP	-CORRIDORS / 64 SF
OUTDOOR SPACES	
PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED:	
( / Space Allowance)	( / Actual Space Provided)
-PLAY YARDS / NP	PORCHES/DECKS / 1475
-OUTDOOR STORAGE / NP	PLAY YARDS / 15,000 SF -Hard surface play adjacent to facility
	OUTDOOR STORAGE / 58 SF
SECONDARY OUTDOOR AREAS PROVIDED:	
( / Space Allowance)	( / Actual Space Provided)
-PORTE CHOCHERE / NP	PORTE CHOCHERE / 875 SF
-PEDEST WALKS / NP	PEDEST WALKS / 1400 SF
-VEHIC CIRC / NP	VEHIC CIRC / NA -Shared w/Hospital
-SERVICE AREA & DRIVE / NP	SERVICE AREA & DRIVE/NA -Shared w/Hospital

(1)Mr. Allen Hale, St. Vincents Hospital, Jacksonville, FL, 904/387/7300

(2)Florida Administrative Code, Chapter 10N-12, Child Day Care Standards

(3)Day Care Consultant, Children, Youth, and Families Program Office, Department of Social and Rehabilitation Services, 1317 Winewood Blvd., Tallahassee, FL 32301, 904/488-1850.

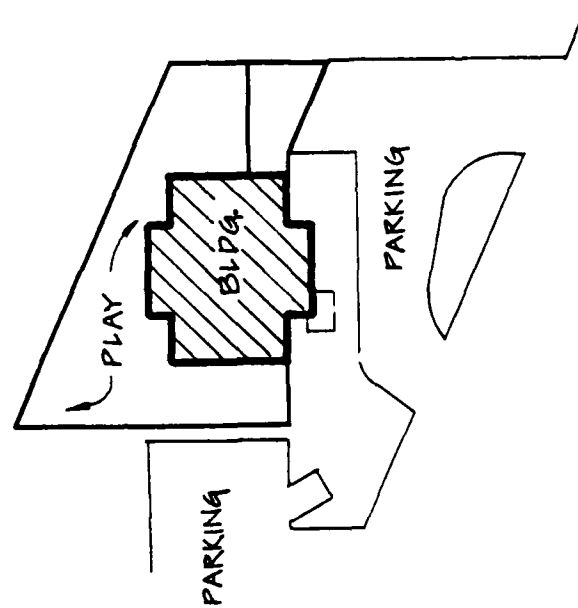


GERBER CHILDREN'S CENTERS, INC  
Jacksonville, FL

NOTE: Exterior dimensions exact.  
Critical major interior dimensions  
measured. Many minor dimensions/spaces  
sized/configured from sketches/pictures  
(+ 5% var.).

a. Floor plan.

Figure 3. Gerber Children's Centers, Inc.



b. Site sketch.



c. Entry elevation.



d. Rear perspective.

Figure 3. (Gerber Children's Centers, Inc., Cont'd)



e. Typical classroom.



f. Elevated library.

Figure 3. (Gerber Children's Centers, Inc., Cont'd).



g. Diaper changing.



h. Kitchen.

Figure 3. (Gerber Children's Centers, Inc., Cont'd).

## **Kinder-Care Learning Centers, Inc.**

Kinder-Care has been in business since 1969 and is the largest of all organizations evaluated, having 844 centers operating in 40 states. It has an aggressive construction program, with 125 facilities planned for this year.

All Kinder-Care operations are centrally controlled from the corporate headquarters in Montgomery, AL. The corporate offices control center operation, direct expansion operations, and manage existing properties. Control is provided through a hierarchy of regional and district offices. Regional offices provide management to the districts, which in turn supervise daily center operations. Regional offices are staffed with managers, training officers, property management personnel, and administrative technicians. Finance and accounting operations are centralized in the corporate headquarters, with accounting routed from the centers through the districts and regions to the home office.

The headquarters also directs design and construction of all Kinder-Care centers. Two divisions manage the construction activity. The Real Estate Division is responsible for market analysis and property acquisition. The Construction Division executes facility designs, initiates construction contracts, and controls the central volume purchase of most of the required construction materials and supplies. A national network of construction management offices under the Construction Division's control supervises construction contracts.

Kinder-Care currently constructs two standard designs. The first is an open plan configuration of about 4900 sq ft and a capacity of 90 to 100 children. This plan is not predominant, since, for operational reasons, the emphasis has been placed on closed plans; however, it is used when the local population requires a smaller center. Lockers and cabinets subdivide open classroom activity spaces into groups. Infant rooms are totally enclosed. The second design plan is a closed classroom facility which varies in size and capacity based on local licensing requirements and market demand; it is typically 6000 to 11,000 sq ft and serves 120 to 150 children. Classrooms are located symmetrically on a single-access corridor.

Compared to other organizations surveyed, Kinder-Care's approach to design and construction is unique. The high volume of construction has led it to reduce construction costs by creating standard designs, prefabricating the basic facility structural shell, and using volume purchase. Its problem has been to develop a design standard that is sufficiently "fixed" to employ prefabrication techniques while accommodating the varying space and facility requirements of local licensing codes.

Kinder-Care currently uses a design that is adaptable to local codes, but minimizes design changes and related impacts on prefabrication (Figure 4). The basic plan is rectangular, with the main entrance and playground access on opposite ends (short dimension) and connected by a central corridor. Entrance is to a lobby area, with administrative areas on the right and an infant room on the left. Classrooms, usually four, are symmetrically arranged on the central corridor. Classrooms are of two sizes with the two larger rooms subdividable by movable partitions. The basic facility capacity is fixed within a limited range, thus fixing the space allotted to administration and support areas. As a result, the activity spaces need to be changed to meet local codes; the plan is simply adjusted in the longitudinal dimension to meet these variances. This fixes all lateral dimensions and major facility elements. In the longitudinal dimension, the numbers of windows, doors, etc., need not vary; only the wall dimensions, amounts of materials, and prefabrication details must be changed. The construction



material used most often is dimensional lumber; however, where noncombustible construction is required by code, light-gauge steel members of the same dimension are substituted.

A fixed design and the high construction volume allow Kinder-Care to further reduce costs by prefabricating the facility structural elements and volume-purchasing the major construction materials. Basic structural elements of the bearing walls and roof trusses are prefabricated off-site. Kinder-Care deals with prefabricators in four regions; however, 80 percent of the wood structural components fabrication occurs in the Montgomery, AL, area, and light-gauge shell fabrication is done by a contractor in Ohio. Many materials are centrally purchased in volume by the headquarters and shipped to the various sites. Items include major elements such as cabinetry and appliances, but finishes such as carpet, floor tile, paint, etc., are also volume-purchased (see Table 4 for complete list). Except for the structural shell, the rest of the facility construction is conventionally site-erected, which helps accommodate other code requirement variations among sites.

Materials used throughout Kinder-Care facilities are mostly conventional and appropriate for residential or light commercial construction. Kitchen appliances are typically those used in residential units, and windows are double-hung aluminum with enamel finish, etc.; however, one material application stands out. Kinder-Care uses exclusively Alliance Wall in its facilities. This wall finish, purchased in volume, consists of gypsum panel with a factory-applied, baked-enamel finish. It was selected for all wall surfaces in the kitchens, toilets, and classrooms because it is durable, easy to wash, and flexible. In the kitchen/toilet areas, it is an acceptable substitute for tile; it is also a durable finish for corridors and classroom areas. Artwork can be taped to its surfaces and removed with no damage; it can be written on with markers, etc., for classroom activity, and it can withstand normal classroom abuse. Additional gypsum board layers can be added easily to increase fire resistance. Alliance Wall has one disadvantage in that its hard surface is acoustically nonabsorbent/reflective, resulting in a poor acoustical environment if it is the dominant wall finish material.

Table 4 summarizes the data obtained for Kinder-Care Centers.

Table 4

Kinder-Care Learning Centers, Inc., Data Summary

CENTRAL HEADQUARTERS		SELECTED CHILD CARE CENTER	
4505 Executive Park Drive Montgomery, Alabama 36104		2210 Kelly Springs Blvd. Carrollton, Texas 75006	
Mrs. Ann Muscart National Public Relations Director 205/277-5090 Extension 217 30 July 1984		Ms. Bonnie Temple Carrollton Center Director 214/242-0999 16 April 1984	
-Additional personnel contacted (1)			
NATIONAL ORGANIZATION DATA (Average and Preferred)		CENTER DATA (Actual)	
ORGANIZATIONAL BACKGROUND		DATE OF OPENING: January 1984	
-CENTERS IN OPERATION: 844			
-NEW CENTERS IN 1984: 125			
-STATES OF OPERATION: 40			
GENERAL FACILITY CHARACTERISTICS		STANDARD DESIGNS	
		(Actual)	
DESIGN/CONSTRUCTION APPROACH:			
-STANDARD DESIGNS			
SIZES:			
(Average / Preferred)			
-CENTER(SF)			
-OPEN PLAN 4900 / 4900			
-CLOSED PLAN 6-11K / 8-10K			
-PLAY YARD(SF) 8-15K / 12-14K			
-SITE(SF) 23-43K / 30K			
PLAN ARRANGEMENTS PROVIDED:			
(Average / Preferred)			
-OPEN & CLOSED/CLOSED			
-SINGLE STORY/SINGLE STORY			
-CHILDRENS TOILETS			
INDIVIDUAL/INDIVIDUAL			

Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)

CENTER CAPACITY:		(Actual / Licensed)
-MAXIMUM OCCUPANCY (CHILDREN)		NA / NA
-OPEN PLAN	90-100 / 90-100	153 / 170
-CLOSED PLAN	120-150 / 150-200	
<u>OPERATIONAL REQUIREMENTS</u>		
SERVICES: (Provided / % of Program)		(Provided / % of Program)
-FULL DAY / Varies		FULL DAY / 63.4%
-PART DAY		PART DAY
-PRESCHOOL AGE / Varies		PRESCHOOL AGE / 25.5%
-AFTER SCHOOL / Varies		AFTER SCHOOL / 9.8%
-DROP IN (HOURLY) / Varies		DROP IN (HOURLY) / 1.3%
-NIGHT / 0%		
-WEEK END / Varies		
SCHEDULE: (Average / Preferred)		(Actual)
-DAYS/WEEK	M-F / Varies	M-F
-HOURS/DAY	0700-1800 / Varies	0630-1830
PARTICIPATE IN USDA FOOD PROGRAM		
NET SF CHILD: (Average / Preferred)		(Actual / Code)
		33 / 30
GROSS SF CH: (Average / Preferred)		(Actual / Code)
		46.5 / NS
-INDOORS	46 / 46	60.65 / 80
-OUTDOORS	100-200 / 100	
AGE GROUPINGS: (Definition)		(Definition)
-INFANT	1-18 m or CODE	0-11 mos
-TODDLER	18 m - 3 yrs or CODE	12-17 mos
-PRESCHOOL AGE	3 yrs - 5 yrs or CODE	18 mos - 2 yrs
-SCHOOL AGE	5 yrs - 12 yrs or CODE	2 yrs
		3 yrs
		4 yrs
		5 yrs
		6 yrs
		-Licensing Code: Texas, Minimum standards for day care centers.
		-POC: (3)
		-Based on Play Yard 10,310 SF / Licensed Capacity of 170

Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)

CARE GIVER RATIOS:		(Actual / Code)
-INFANT	(Average / Preferred) CODE / 1:4-6	2:12 / 1:5, 2:12 2:14 / 1:6, 2:14
-TODDLER	CODE / 1:4-8	2:18 / 1:9-10 2:22 / 1:11-13
-PRESCHOOL AGE	CODE / 1:10	2:30 / 1:15-17 2:36 / 1:18-20
-SCHOOL AGE	CODE / 1:12	2:44 / 1:22-24 2:52 / 1:26
MAXIMUM GROUP SIZE:		(Actual / Code)
-INFANT	(Average / Preferred) CODE / 18 Max	NP / NS NP / NS
-TODDLER	CODE / 20 Max	NP / 35 NP / 35
-PRESCHOOL AGE	CODE / 30 Max	NP / 35 NP / 35
-SCHOOL AGE	CODE / 45 Max	NP / 35 NP / 35
POPULATION MIX:		(Actual # / %)
-INFANT	(Average % / Preferred %) 15% / Varies	13 / 8.5%
-TODDLER	15% / Varies	12 / 7.8%
-PRESCHOOL AGE	42% / Varies	36 / 23.5%
-SCHOOL AGE	28% / Varies	20 / 13.1%
		33 / 21.6%
		24 / 15.7%
		15 / 9.8%
STAFF(#):		(Actual)
-DIRECTOR	(Average / Preferred) 1 / 1	1
-CARE GIVERS	1 - 10 / 1-10	17
-COOK	1 / 1	0
-JANITOR	Contract/Contract	CONTRACT
-ASST DIRECTOR	1 / 1	2 part-time
		-Based on center size.
		-One assistant serves as cook

## FACILITIES REQUIREMENTS

65

Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)

FACILITIES COSTS			
\$/GROSS SF: (Average / Planning)	- Facility Cost Experience (4)	(Actual) - CLOSED	
- BUILDING			
- OPEN PLAN \$26.80 / \$28		148,050	- Lump Sum
- CLOSED PLAN \$29 / \$29	- Lump Sum	59,120	- Lump Sum
- SITE WORK \$30-150K / NP	- Lump Sum	10,000	- Lump Sum
- PLAY GROUND \$15-20K / NP	- Lump Sum	141,000	- Lump Sum
- SITE \$100-300K / NP	- Lump Sum	358,170	- Lump Sum
- TOTAL FACIL \$113-400K / \$330K			
- INCLUDED IN ABOVE BUILDING COST:			
- BUILDING			BUILDING
- FIXED FURNITURE & EQUIPMENT			FIXED FURN & EQUIP.
- CARPET			
- INCLUDED IN ABOVE SITE WORK COSTS:			
- PAVING			- PAVING
- PARKING LOT/PAVING			- PARKING
- LANDSCAPING			- GRADING
- TRASH AREA			- SURVEYING
			- LANDSCAPING
- INCLUDED IN ABOVE PLAY GROUND COSTS:			
- EQUIPMENT			- EQUIP
- SOD			- WADING POOL
- PLAY PILLS			- BARK PITS (PLAY)
- SWIMMING POOL			
- PLAY AREA COVERS			
ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES			
TYPES OF CONTRACTS PROVIDED:			
- CONVENTIONAL DESIGN-BID-BUILD			- BOTH Negotiated and Competitive Bid Contracts
ALTERNATIVE BUILDING CONSTRUCTION METHODS UTILIZED:			
- COMPONENT CONSTRUCTION			CONVENTIONAL DESIGN-BID-BUILD
- WOOD FRAME			COMPONENT CONSTRUCTION
- METAL FRAME			WOOD FRAME

**Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)**

<p>PREFABRICATED BUILDING COMPONENTS PROVIDED:</p> <ul style="list-style-type: none"> <li>-INTERIOR WALLS</li> <li>-EXTERIOR WALLS</li> <li>-ROOF TRUSSES/FRAMING</li> <li>-CABINETRY</li> </ul>		<ul style="list-style-type: none"> <li>-INTERIOR WALLS</li> <li>-EXTERIOR WALLS</li> <li>-ROOF TRUSSES/FRAMING</li> <li>-CABINETRY</li> </ul>
<p>BUILDING ELEMENTS/MATERIALS PURCHASED IN VOLUME:</p> <ul style="list-style-type: none"> <li>-APPLIANCES</li> <li>-CABINETRY</li> <li>-HVAC UNITS</li> <li>-ROOF TRUSSES</li> <li>-STUD WALLS</li> <li>-ALARM SYSTEMS</li> <li>-CONSTRUCTION MATERIALS</li> <li>-FLOOR TILE</li> <li>-CARPET</li> <li>-LIGHT FIXTURES</li> <li>-WINDOWS</li> <li>-DOORS</li> <li>-WALL FINISHES</li> <li>-PAINT</li> </ul>		<ul style="list-style-type: none"> <li>-APPLIANCES</li> <li>-CABINETRY</li> <li>-HVAC UNITS</li> <li>-ROOF TRUSSES</li> <li>-STUD WALLS</li> <li>-ALARM SYSTEMS</li> <li>-CONSTRUCTION MATERIALS</li> <li>-FLOOR TILE</li> <li>-CARPET</li> <li>-LIGHT FIXTURES</li> <li>-WINDOWS</li> <li>-DOORS</li> <li>-WALL FINISHES</li> <li>-PAINT</li> </ul>
<p><b>FACILITY FUNCTIONAL REQUIREMENTS</b></p>		
<p><b>PROGRAM SPACES</b></p>		
<p><b>PRIMARY ACTIVITY SPACES PROVIDED:</b></p>		
<p>-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DG 1110-3-143).</p>		
<p><b>SECONDARY ACTIVITY SPACES PROVIDED:</b></p>		
<p>(/ Included in NET Space)</p>		
<p>-EATING / Included</p>		
<p>-NAPPING / Included</p>		
<p>-CRIB / Included or 31.5 SF/Crib</p>		
<p>-DIAPER STATION / 30 SF ea</p>		
<p>-TOILETS(CH) / 41-61 SF ea</p>		
<p>-CUBBIES / 1 SF ea</p>		
<p>-CLASSROOM RECEPTION/CAKE / 28 SF ea</p>		
<p>-Where code does not require a higher net allowance for infants, additional space is planned for cribs</p>		
<p>-Cubbies wall mounted</p>		
<p>-Classroom reception includes care-giver locker &amp; 20 SF additional circulation at classroom entrance</p>		
<p>-Size of toilet room varies with age served, fixtures/room and sex separation.</p>		
<p>(/ Actual Space Provided)</p>		
<p>EATING / Included</p>		
<p>NAPPING / Included</p>		
<p>CRIB / Included</p>		
<p>DIAPER STATION / 16 SF</p>		
<p>TOILETS(CH) / 12 @ 41 SF = 492 SF</p>		
<p>CUBBIES / 172 @ 1 SF = 172 SF</p>		
<p>-Stored during "awake" hours</p>		

**Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)**

<u>NON PROGRAM SPACES</u>	
<u>ADMINISTRATION SPACES PROVIDED:</u> (/ Space Allowance)	
-WAITING-RECEPT / 100 SF	(/ Actual Space Provided) WAITING-RECEPT / 1 @ 250 SF
-VESTIBULE / 35 SF	OFFICES / 1 @ 85 SF
-OFFICE / 90 SF, Director	STAFF LOUNGE / 1 @ 88 SF
-STAFF LOUNGE / 76 SF	CENTRAL STOR / 1 @ 38 SF
-CENTRAL STORAGE / 56 SF	ISOLATION AREA / 1 @ 56 SF
-ISOLATION AREA / 40 SF	ADULT TOILETS / 1 @ 46 SF
-ADULT TOILETS / 61.75 SF	-Single toilet staff/ parents, separate Male/ Female CA only
-Converted to District Manager's Office. -Also used as staff lounge. -Single toilet staff and parents	
<u>SUPPORT SPACES PROVIDED:</u> (/ Space Allowance)	
-KITCHEN / 200 SF	(/ Actual Space Provided) KITCHEN / 150 SF
-LAUNDRY / 30 SF	LAUNDRY / 56 SF
-MAINT/JANITOR / 30 SF	MAINT/JANITOR / (incl. in laundry)
-MECH/ELECT / 30 SF	-Sprinkler closet provided if code required.
-PANTRY / 100 SF	-Pantry includes space for water heater.
-SPRINKLER CLOSET / 30 SF	-Maintenance/Janitor and laundry spaces are combined.
-HVAC CLOSET / 15 SF ea	-HVAC closets provided: 1 for admin/infant area 1 for each classroom pair, normally 4 in center = 45 SF
<u>OTHER NON ASSIGNABLE SPACE PROVIDED:</u> (/ Space Allowance)	
-CORRIDORS / 590 SF	(/ Actual Space Provided) CORRIDORS / 605 SF
	-Corridor width fixed @ 5', however length varies by facility. Includes alcove.
<u>OUTDOOR SPACES</u>	
<u>PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED:</u> (/ Space Allowance)	
-PORCHES/DECKS / 1K-2K SF	(/ Actual Space Provided) PORCHES/DECKS / 190 SF
-PLAY YARDS / 12K-13K SF	PLAY YARDS / 10,310 SF
-OUTDOOR STORAGE / 50 SF	OUTDOOR STORAGE / 46.5 SF
-SWIMMING POOL / 630 SF	POOL EQUIP. STOR / 20 SF
-HARD WHEEL TOY SURFACE / 15K-16K SF	SWIMMING POOL / 200 SF
-COVERED HARD SURFACE / 1K SF	-Under eaves/roof overhang



**Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)**

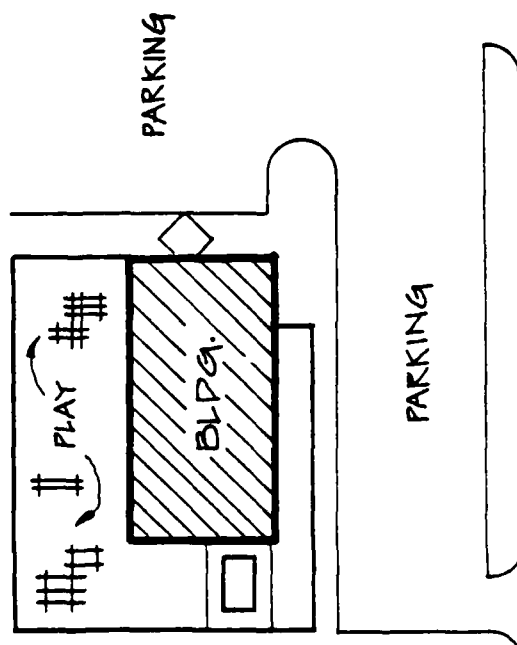
SECONDARY OUTDOOR AREAS PROVIDED:	
( / Space Allowance)	( / Actual Space Provided)
-PORTE CHOCHERE / 90 SF	PORTE CHOCHERE / 88 SF
-PEDEST WALKS / As Required	PEDEST WALKS / NP
-VEHIC CIRC / As Required	VEHIC CIRC / NP
-SERVICE AREA & DRIVE / As Required	SERVICE AREA & DRIVE/NP
	(Incl. above)
	-Space for 15 cars, driveways, dumpster and drop-off.
 (1) Additional Personnel Contacted:	
Mr. Pat Delevan, Director, Real Estate Division, KC-HQ, AL, 205/277-5090	
Mr. Terry Mount, Design, KC-HQ, AL, 205/277-5090	
Mrs. Barbara Albert, Regional Manager, TX, 214/243-4814	
Mrs. Beverly Rockman, District Manager, TX, 214/245-0152	
Mrs. Linda Blakely, Center Director, Carrollton, TX (Retired)	
Mrs. Bonnie Temple, Center Director, Carrollton, TX, 214/242-0999	
 (2) States of Operation and Number of Centers/State:	
AL-41, AZ-21, AR-10, CA-44, CO-16, CT-18, DE-2, FL-33, GA-77, IL-33, IN-20, IA-7, KS-17, KY-12, LA-7, ME-1, MD-9, MA-35, MI-17, MN-12, MS-13, MO-45, NE-9, NV-4, NH-2, NJ-13, NM-6, NC-39, OH-40, OK-13, OR-10, PA-16, RI-2, SC-26, TN-27, TX-10, UT-1, VA-30, WA-5, WI-1.	
 (3) Director of Licensing, Texas Department of Human Resources, P.O. Box 2960, Austin, TX 78769, (512) 441-3355.	
 (4) Code Administrator: Gary Heuback, City Building Department, Carrollton, TX, (114) 323-5055.	
 (5) Facility Cost Experience (see attached).	

**Table 4 (Kinder-Care Learning Centers, Inc., Cont'd)**

Kinder-Care Facility Cost Experience

	Site Cost	Building Cost	Site Development	Playground	Total Cost	Opened
6 Thousand Oaks, CA	285,000	245,784	136,617	7,371	674,772	7 May 84
*7 Las Vegas, NV	77,000	180,209	71,894	7,371	336,474	7 Nov 83
* 896 Ft. Collins, CO	85,000	132,621	48,568	7,371	273,560	21 May 84
#902 Portland, OR	70,000	105,772	29,286	7,371	212,429	4 Jun 84
#887 Tampa, FL	50,000	96,405	72,760	7,371	226,536	3 Apr 84
#861 Chapel Hill, NC	118,000	145,796	42,685	7,371	313,852	2 Apr 84
* 864 San Antonio, TX Timber Path	70,000	85,165	36,200	7,371	198,736	12 Mar 84
#854 Downers Grove, IL	81,840	128,451	60,498	7,371	278,160	1 Jan 84
#879 Columbus, OH	93,000	96,358	48,600	7,371	245,329	9 Jul 84
#805 Burke Lake Center, VA	110,000	201,827	101,894	7,371	421,092	5 Mar 84
* 830 Sterling Heights, MI 15 Mile Rd.	50,000	138,761	65,673	7,371	261,805	23 Jan 84
#830 Spokane, WA Mullen Rd.	68,000	129,813	29,105	7,371	234,289	9 Jan 84
Average Cost/ % of Total	96,486/31%	140,580/46%	61,982/20%	7,871/2%	306,420	





b. Site sketch.



c. Entry perspective.

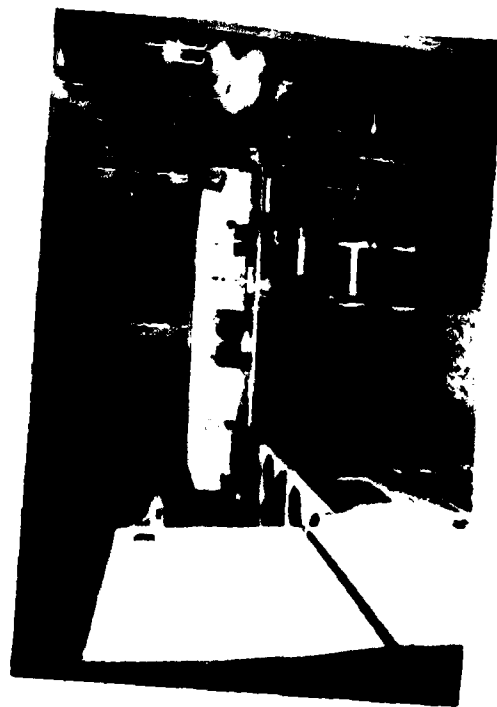


d. Typical classroom.

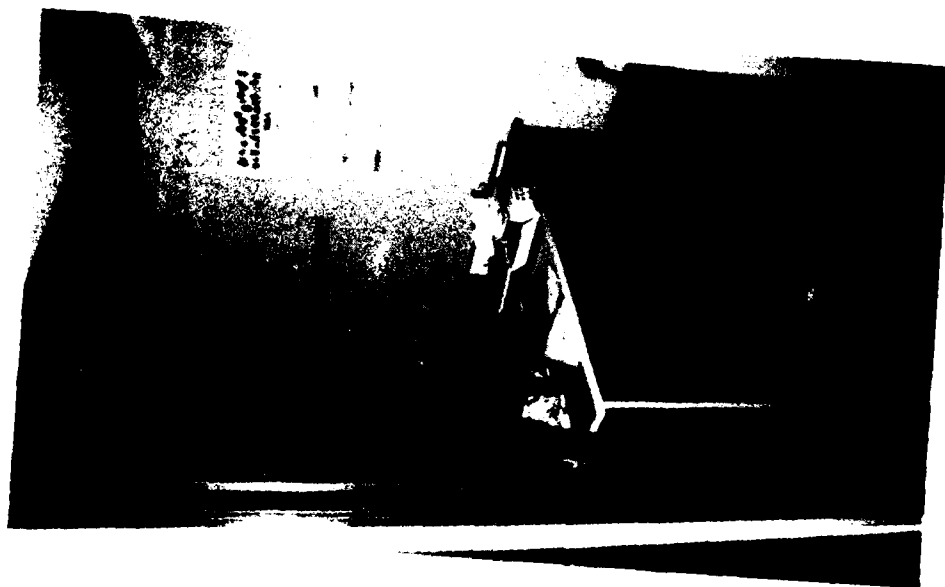
Figure 4. (Kinder-Care Learning Center, Inc., Cont'd).



e. Pool.

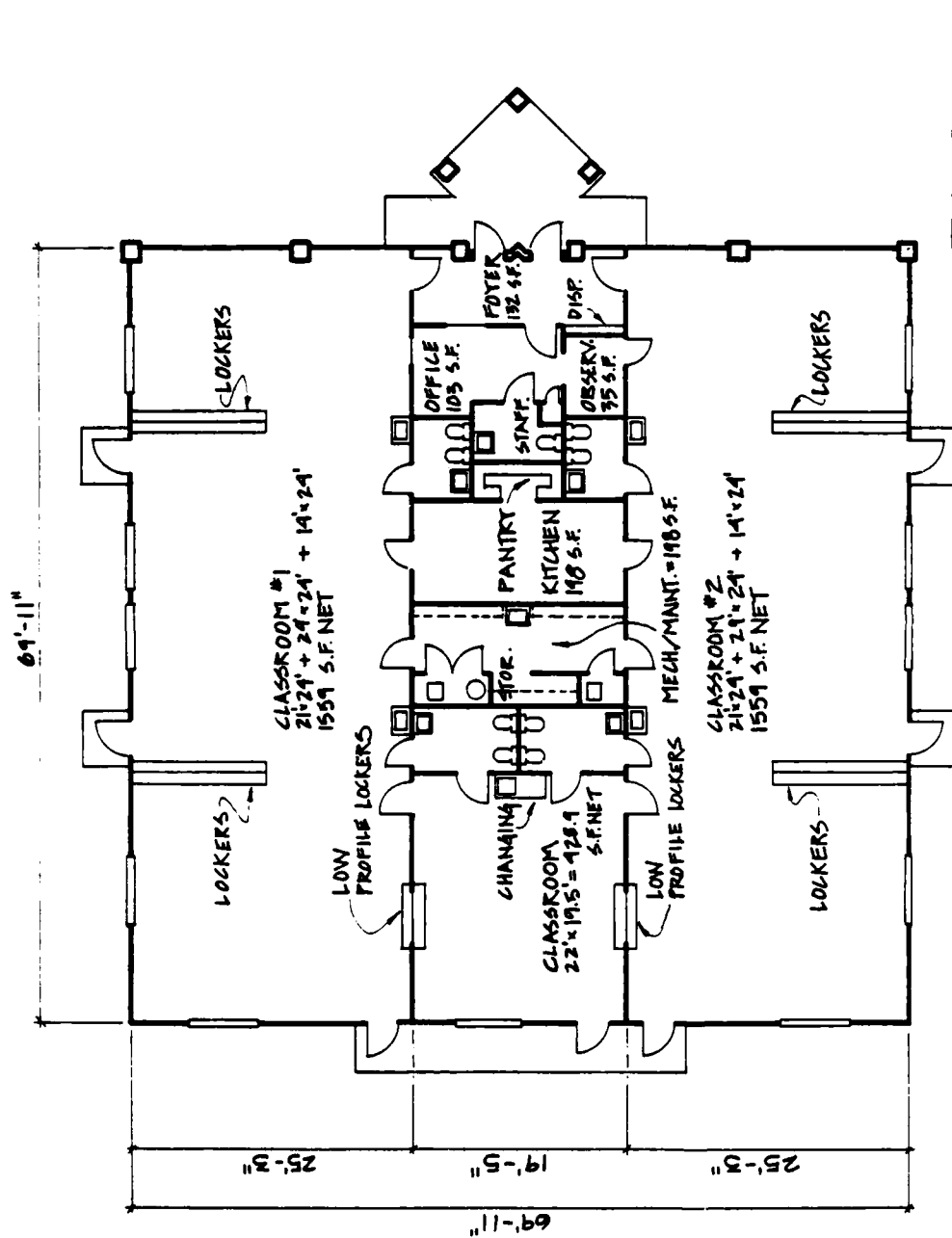


f. Kitchen.



g. District manager's office.

Figure 4. (Kinder-Care Learning Centers, Inc., Cont'd).



KINDER-CARE LEARNING CENTERS, INC.

Standard Design, Open Plan

Licensed Capacity: Varies  
Gross Square Footage: 4888 sq ft

NOTE:

Exterior dimensions exact.

Critical major interior dimensions measured.

Many minor dimensions/spaces/sized/  
configured from sketches/pictures  
(+ 5% var.).

h. Floor plan, open.

Figure 4. (Kinder-Care Learning Centers, Inc., Cont'd).

## **La Petite Academies**

La Petite, headquartered in Kansas City, MO, is the second largest child care organization surveyed, having 370 centers operating in 21 states. La Petite is a wholly owned subsidiary of CenCor Corporation, also of Kansas City. It has the second most aggressive expansion program, with 60 new centers planned in 1984. It is the only major chain not belonging to the National Association for Child Development and Education, a proprietary child care trade association based in Washington, D.C.

La Petite follows a conventional design-bid-build process. It has a standard design, evolved from its construction experience, that is modified to meet specific site and local code requirements. Construction contracts are either competitively bid or negotiated with a selected contractor. Prefabrication techniques are not used to any major extent in the facilities except for roof trusses, joists, and cabinetry. Cabinetry, appliances, Alliance Wall panels, carpeting, and vinyl floor finishes are purchased in volume.

La Petite's standard facility design (see Figure 5) is a rectangular open plan of one story. Toilet areas are located at one end of the rectangle and kitchen/pantry areas at the other, much like "islands" surrounded by child activity space. The open spaces are broken somewhat by play equipment and furnishings. The infant area is in one corner of the facility and is either enclosed on three sides by full-height partitions and on the fourth side by a low wall and gate, or enclosed on all four sides by full-height partitions. The director's office and reception area are in another corner of the facility and are an extension of the basic rectangular configuration.

Centers are normally flat-roofed with a false-shingled mansard to screen rooftop mechanical equipment and provide an overhang for window shading and protection from weather. To accent the entry, the extension from the basic rectangle which provides the reception area is a shed roof configuration. Exterior materials are asphalt shingles, stucco or brick wall facings, and aluminum windows and entryway. The basic structure is wood or light-gauge metal frame construction, depending on local code requirements.

Facility interiors typically have materials, finishes, and equipment of light commercial or residential quality. Walls in child activity areas are Alliance Wall (see previous section for description), which are durable and resist damage. Toilet room walls are tiled to waist height. Remaining walls are gypsum board over wood or light-gauge metal studs. Floor finishes are about 50 percent sheet vinyl and 50 percent carpeted; vinyl is placed in the toilet rooms and in shared activity/gross motor activity areas.

Table 5 displays the data obtained for La Petite.

**Table 5**  
**La Petite Academy Data Summary**

<u>CENTRAL HEADQUARTERS</u>		<u>SELECTED CHILD CARE CENTER</u>
City Center Square, 10th & Baltimore P.O. Box 26610 Kansas City, Missouri 64196		8225 Normandy Blvd. Jacksonville, Florida 32221
Mr. Jack Bruzman, President 816/474-4750 15 August 1984	-Additional personnel contacted (1)	Ms. Claire Long, Center Director 904/781-2882 13 July 1984
<u>NATIONAL ORGANIZATION DATA (Average and Preferred)</u>		<u>CENTER DATA (Actual)</u>
<u>ORGANIZATIONAL BACKGROUND</u>		
-CENTERS IN OPERATION: 384		
-NEW CENTERS IN 1984: 60		
-STATES OF OPERATION: 20 (4)		
<u>GENERAL FACILITY CHARACTERISTICS</u>		
<u>DESIGN/CONSTRUCTION APPROACH:</u>		
-STANDARD DESIGNS		STANDARD
SIZES: (Average / Preferred)		(Actual)
-CENTER(SF) 5K-7.4K / None		4,660
-PLAY YARD(SF) 7.5K-13.5K / None		11,494
-SITE(SF) 23K - 33K / None		29,779
<u>PLAN ARRANGEMENTS PROVIDED:</u>		
(Average / Preferred)		(Actual)
-OPEN/OPEN		OPEN
-SINGLE STORY: SINGLE STORY		SINGLE
-CHILDRENS TOILETS		CENTRAL
CENTRAL/CENTRAL		
<u>CENTER CAPACITY:</u>		
-MAXIMUM OCCUPANCY (Licensed / Design)		(Actual / Licensed)
-CHILDREN 100-200 / 100-200		95 / 120
-With open plan, directly accessible from classroom.		

DATE OF OPENING: August 1979



Table 5 (La Petite Academy, Cont'd)

OPERATIONAL REQUIREMENTS		(Provided / 2 of Program)
SERVICES: (Provided / 4 of Program)		FULL DAY / 512
-FULL DAY / 632		PART DAY
-PART DAY		PRESCHOOL AGE / 12
-PRESCHOOL AGE / 112		AFTER SCHOOL / 472
-AFTER SCHOOL / 222		DROP IN (HOURLY) / 12
-DROP IN (HOURLY) / 22		
-NIGHT / 12		
-WEEK END / 12		
		-Saturday only
SCHEDULE: (Average / Preferred)		(Actual)
-DAYS/WEEK	Mon-Sat/Mon-Sat	Mon - Fri
-HOURS/DAY	0600-1830/0600-1830	0615-1830
NET SF/CHILD: (Average / Preferred)	Code / 35	(Actual / Code)
		27 / 20
GROSS SF/CH: (Average / Preferred)		(Actual / Code)
-INDOORS	25 - 40 / 40	39 / NS
-OUTDOORS	75 - 100 / 100	96 / 45
AGE GROUPINGS: (Definition)		(Definition)
-INFANT	0 - 1 yr	1 yr
-TODDLER	1 - 2 yr	2 yr
-PRESCHOOL AGE	2 1/2 - 5 yr	3 yr
-SCHOOL AGE	5 yr - up	5+ yr
CARE GIVER RATIOS: (Average / Preferred)		(Actual / Code)
-INFANT	Code / Code	1:8 / 1:8
-TODDLER	Code / Code	1:12 / 1:12
-PRESCHOOL AGE	Code / Code	1:15 / 1:15
-SCHOOL AGE	Code / Code	1:20 / 1:20
		1:25 / 1:25
MAXIMUM GROUP SIZE: (Average / Preferred)		(Actual / Code)
-INFANT	Code / Code	8 / NS
-TODDLER	Code / Code	NP / NS
-PRESCHOOL AGE	Code / Code	35 / NS
		35 / NS

-Licensing Code: (2)  
 -POC: (3)  
 -Actual net includes "circulation" space in open plan.  
 -Min. size based on 50% of licensed capacity.

Table 5 (La Petite Academy, Cont'd)

-SCHOOL AGE	Code / Code	50 / NS
POPULATION MIX:		
(Average Z / Preferred Z)		
-INFANT	102 / None	(Actual # / 1)
-TODDLER	152 / None	7 / 72
-PRESCHOOL AGE	502 / None	11 / 122
		15 / 162
		16 / 172
-SCHOOL AGE	252 / None	45 / 482
STAFF(#):		
(Average / Preferred)		
-DIRECTOR	1 / 1	(Actual)
-CLERICAL	0 / 0	1
-CARE GIVERS	4-20 / 13	11
-COOK	1 / 1	(1)
-JANITOR	Contract / Contract	CONTRACT
-VAN DRIVER	0-1 / 1	
-Usually mix of teachers and aids.		
-Care givers do light work, contractor does the rest.		
-Assistant Director		
-7 full-time, 4 part-time		
-Teacher of 2-yr olds		
-Once per week (caregivers do daily cleaning)		

# FACILITIES REQUIREMENTS

LIFE SAFETY: (Minimum Criteria)	Code
-AREA LIMITS(SF)	Code
-EXITS	Code
-#s/AREA	Code
-DIRECT FROM CLASSROOM	Code
-EXIT ACCESS CORRIDOR WIDTH(FT)	Code
-FIRE PROTECTION	Code
-STRUCTURE(HRS)	Code
-AREA SEPARATION(HRS)	Code
-EXITWAYS(HRS)	Code
-HAZARD SEPARATION(HRS)	Code
-EXIT ACCESS CORRIDOR(HRS)	Code
-PARTITION(N-BEARING)(HRS)	Code
-ROOF (HRS)	Code
-INTERIOR FINISH(CLASS)	Code
-SPRINKLER	Code
-ALARM SYSTEM PROVIDED:	Code
-TO FIRE STATION	Code
-INTERNAL	Code
-AUTOMATIC	Code
-SMOKE DETECT	Code
-CODE	Code
NFPA 101, BOCA, UBC, SBC, As Required	
(Actual / Code Requirement)	
4,660 / NS	
5 / 2	
4 / NS	
NA / NS	
-100 persons/22" unit	
-No corridors exist in this facility.	
NP / NS	
NA / NA	
NA / NA	
NP / NS	
NA / NS	
NP / NS	
NP / NS	
NP / A,B	
0 / NS	
-Smoke barrier & 20 min. doors	
-Means of egress; A, B, or C throughout	
(Actual / Code Requirement)	
INTERNAL/INTERNAL	
MANUAL/MANUAL	
SMOKE DETECT/NR	
Chapter 4A-36, Florida Administrative Code, Minimum Standards for Life Safety and Fire Prevention in Child Care Facilities	



Table 5 (La Petite Academy, Cont'd)

ALTERNATIVE BUILDING CONSTRUCTION METHODS UTILIZED:		(None Identified)
PREFABRICATED BUILDING COMPONENTS PROVIDED:		
ROOF JOISTS/TRUSSES		WOOD TRUSSES
CABINETS		
BUILDING ELEMENTS/MATERIALS PURCHASED IN VOLUME:		
WALL PANELS		EQUIPMENT
APPLIANCES		CABINETS
CABINETS		SIGNS
CARPET		
VINYL FLOOR		
FACILITY FUNCTIONAL REQUIREMENTS		
PROGRAM SPACES		
PRIMARY ACTIVITY SPACES PROVIDED:		-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army guidance (DC 1110-3-143).
SECONDARY ACTIVITY SPACES PROVIDED:		(/ Actual Space Provided)
or (if excluded / Space Allowance)		EATING / Included
-EATING / Included		NAPPING / Included
-NAPPING / Included		CRIP / 0 SF
-CRIB / Included		DIAPER STATION / 17 SF
-DIAPER STATION / 13.54 SF ea		TOILETS(CH) / 2 @ 41 SF
-TOILETS(CH) / .3 - .6 SF/CH		= 82 SF
-CUBBIES / Included		CUBBIES / 125 @ 1 SF = 125 SF
-CLASSROOM RECEPT/CARE / Included		
NON PROGRAM SPACES		
ADMINISTRATION SPACES PROVIDED:		(/ Actual Space Provided)
or (if excluded / Space Allowance)		WAITING-RECEPT / 137 SF
-WAITING-RECEPT / 137		OFFICES / 57 SF
-OFFICES / 57 SF		CENTRAL STOR / 45 SF
-CENTRAL STORAGE / 45 SF		ISOLATION AREA / 0
-ISOLATION AREA / 60 SF		ADULT TOILETS / 27 SF
-ADULT TOILETS / 27 SF		
SUPPORT SPACES PROVIDED:		(/ Actual Space Provided)
or (if excluded / Space Allowance)		KITCHEN / 208 SF
-KITCHEN / 150 SF		MAINT/JANITOR / 23 SF
-MAINT/JANITOR / 23 SF		
-PANTRY / 40 SF		

**Table 5 (La Petite Academy, Cont'd)**

OTHER NON ASSIGNABLE SPACE PROVIDED:  
( / Space Allowance)

## OUTDOOR SPACES

PRIMARY OUTDOOR ACTIVITY SPACES PROVIDED:

(/ Space Allowance)

-PORCHES/DECKS / 500 SF

-PLAY YARDS / 11,500 SF

SECONDARY OUTDOOR AREAS PROVIDED:

( / Space Allowance)

-PFDST WALKS / Various

-VEHIC CIRC / VARIES

- VEHIC CIRC / Varies
- SERVICE AREA & DRIVE / Varies

(1) Mr. Thomas Loehr, HQ. Design Div. (MO), 816/474-4750

Mr. Robert Rodriguez. HQ. VP Operations (MO), 816/474-4750

Ms. Tammy Carver, Center Director (Retired), FL

Ms. Claire Long, Center Director, FL, 904/781-2882

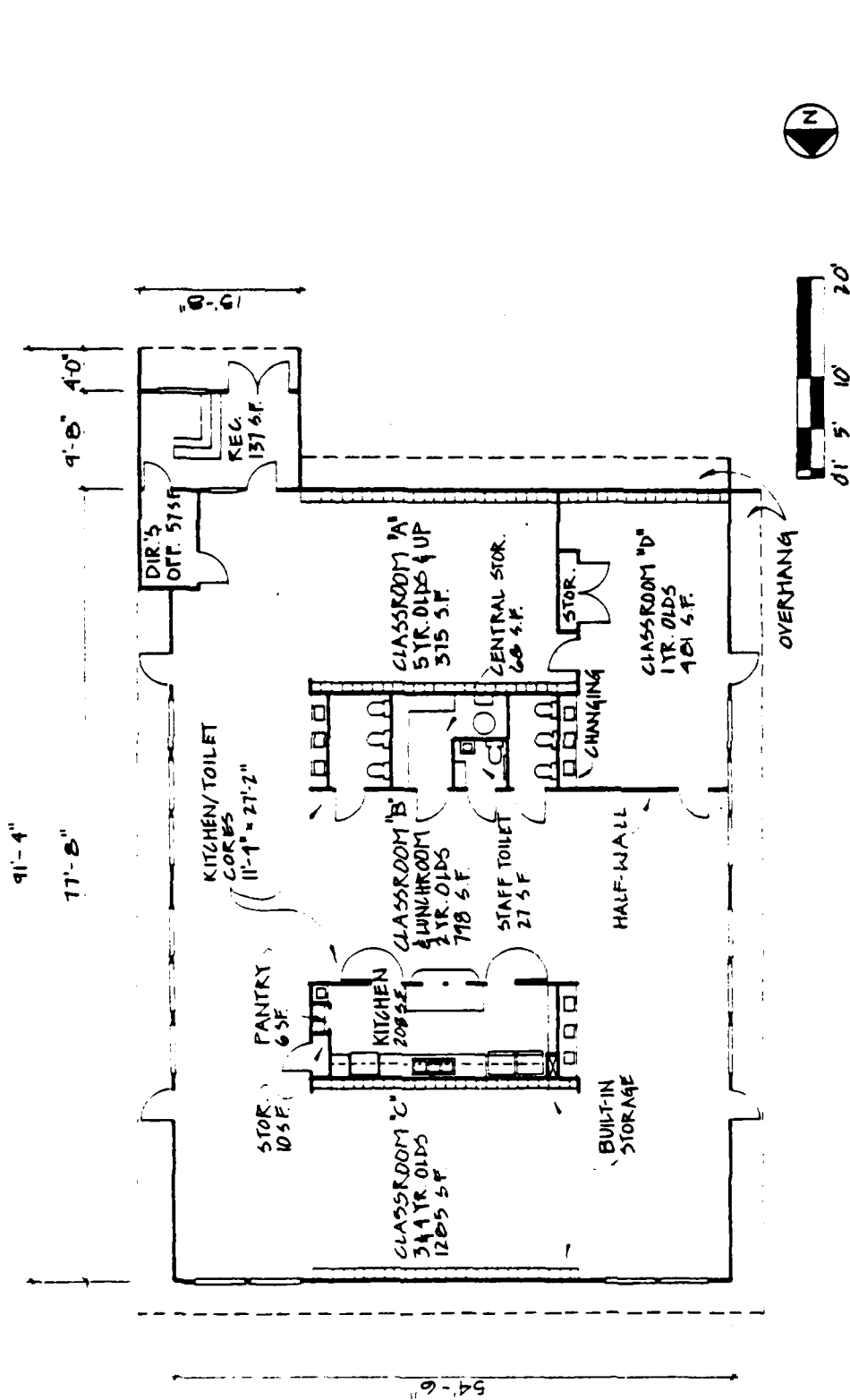
(2) Florida Administrative Code, Chapter 10M-12, Child Day Care Standards

(3) Bay Care Consultant, Children, Youth, and Families Program Office, Department of Social and Rehabilitation Services,  
1117 Winewood Blvd., Tallahassee, FL 32301, (904) 488-1850.

(4) State of Operation and Numbers of Centers/State: AL-7, AR-5, AZ-4, CO-20, FL-56, GA-24, IL-8, IN-11, IA-4, KS-15, MO-21, MS-2, NE-5, NM-2, NC-15, OK-23, SC-22, TN-31, TX-98, and VA-11.

(5) Backup cost data: Average building and site costs by state.

	<u>Building (\$)</u>	<u>Site (\$)</u>	<u>Total (\$)</u>		<u>Building (\$)</u>	<u>Site (\$)</u>	<u>Total (\$)</u>
Arizona	180,000	35,000	215,000	Missouri	160,000	30,000	190,000
California	250,000	75,000	325,000	North Carolina	150,000	25,000	175,000
Colorado	160,000	70,000	200,000	South Carolina	150,000	25,000	175,000
Florida	170,000	40,000	210,000	Texas	160,000	35,000	195,000
Georgia	160,000	30,000	190,000	Washington, DC	180,000	40,000	220,000
Indiana	165,000	30,000	195,000				
				Average Cost/ % of Total	171,364/81%	39,545/19%	208,187



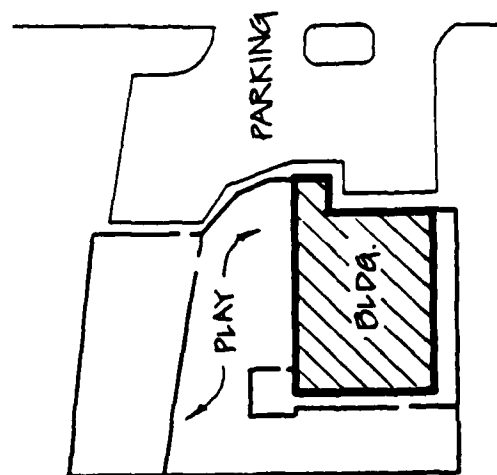
LA PETITE ACADEMY  
Jacksonville, FL

Licensed Capacity: 120 Children  
Gross Square Footage: 4600 sq ft or 34 sq ft/child

NOTE:  
Exterior dimensions exact.  
Critical major interior dimensions measured.  
Many minor dimensions/spaces/sized/  
configured from sketches/pictures  
(± 5% var.).

a. Floor Plan.

Figure 5. La Petite Academy.



b. Site sketch.



c. Entry perspective.



d. Typical classroom area.

Figure 5. (La Petite Academy, Cont'd).

## **6 OVERVIEW OF DATA OBTAINED FROM PROPRIETARY CHILD CARE CENTERS**

### **Summary of Proprietary Data**

The proprietary child care organizations' programs and facilities investigated for this study, although centrally controlled and operated, usually varied among locations to meet local market requirements. However, there are some identifiable trends and ranges in what they offer. The following discussion corresponds to the data display format of Tables 1 through 5.

### **Organizational Background**

Proprietary child care organizations ranged in size and scope of operation from as few as 57 centers in six states to as many as 844 centers in 40 states. Kinder-Care was by far the largest--more than twice the size of its nearest competitor--and had the largest construction program. Due to the small sample evaluated, the typical size of national child care organizations could not be established; however, since only the largest ones were addressed in this study, and the smallest had only 57 centers, most organizations could be assumed to have fewer than 100 centers.

### **General Facilities Characteristics**

All organizations indicated that their facility construction followed standard designs; however, for the smaller organizations, the standards were limited mostly to identifying equipment and finishes, and adjusting a standard layout to meet local code and licensing requirements. Their "standard designs" had evolved over time as a result of their construction experience; however, they were preparing new design/construction documentation packages for each new facility. Kinder-Care, due primarily to the magnitude of its construction program, had the most advanced standard design package (see the discussion in the *Alternative Construction and Acquisition Methods* section below and in the proprietary data above).

Centers ranged in size from 4800 to 7400 gross sq ft, with a preferred average size of 6400 gross sq ft. All plans were single-story, and except for La Petite, all plans were "closed." Centers' design occupancies ranged from 80 to 200 with a preferred average occupancy of 130 children. This compares roughly to a mid-sized Army center. This average facility size allowed the proprietary facilities to stay well within the most restrictive fire area limitations of the building codes for all construction types, and helped to keep costs down. Size was assumed to be directly related to market demands and operational economies. For the user's convenience and to be more competitive, the preference appeared to be toward more centers distributed throughout the market area rather than large, central centers.

The biggest difference between Army and proprietary facilities is in the area of gross square footage per child. The net square footage per child for proprietary facilities is regulated by licensing code and is roughly equivalent to Army requirements. This net includes the primary and some secondary activity spaces. The gross includes all remaining space, or the administration, support, and some of the secondary activity spaces. Proprietary organizations tend to provide only the very minimum administrative and support space necessary, which is usually far below Army provisions and keeps their costs down. In addition, proprietary centers are often small or centrally planned



minimizing circulation requirements. The ratio of net to gross square footage per child can indicate the efficiency of a facility design and/or the program/activity spaces versus all support requirements. For the proprietary facilities, these ratios ranged from 1:1.14 to 1:2.14, with the average ratio for centers visited being 1:1.55 versus a ratio of 1:2.14 for the Army, or a difference of about 38 percent. This is only an indication of where the differences between the Army and proprietary facilities occur, and does not mean that specified Army requirements are invalid.

#### *Operational Requirements*

The proprietary centers' program offerings were directly related to the market in a given location. Facilities were located strategically, based on market investigations, and were designed to provide a certain range of program offerings as determined by the home office. However, many of the centers visited were not operating at capacity nor were they providing the full range of programs identified by their headquarters as being available, since the local market would not support them. Most of the centers visited were new, and the market not yet fully developed. Almost without exception, operational requirements were controlled directly by licensing requirements. Local markets determined the programs, and licensing authorities specified the minimums to conduct those programs. Few centers were staffed in excess of minimums specified by the licensing authorities; however, where exceptions were made, they were to provide staffing that exceeded the codes for infants.

#### *Facilities Requirements (Life Safety)*

All facilities were individually designed to meet the local building code requirements, especially in areas of life safety; however, the requirements of those codes varied widely among states or municipalities. For single-story structures of the gross square footages used in the child care centers, all codes for the centers visited allowed all construction types. Therefore, most facilities were wood-framed. The headquarters indicated there were instances where they had to construct noncombustible facilities and where local code authorities modified even the licensing requirements to require it. In these cases they used light-gauge metal framing systems that were dimensionally identical to wood framing.

The most stringent fire separation indicated was 1 hour. The requirements for fire separation varied; however, most states/municipalities required a 1-hour fire separation only for hazard areas such as mechanical and kitchen spaces. Requirements for sprinklers also varied, but where required, were normally limited to hazard areas. Alarm systems were normally required to be internal only, having automatic heat and products of combustion detection. Some areas did require that alarms be linked to the local fire station.

Most codes allow variances in restrictions if occupant safety can be assured by other means. Some key examples are: (1) most codes allow area increases if facilities are fully sprinkled; (2) most codes allow increases in exit travel distance where facilities are fully or partially sprinkled; and (3) where facilities are designed with at least one classroom exit direct to the exterior, most codes allow both changes in egress requirements and reductions in exit access corridor resistance ratings (if required).

#### *Facilities' Costs*

Costs for the facilities visited ranged from \$27.17/gross sq ft to \$51.53/gross sq ft for the total facility, including the building, site work, and playground, or an average

cost of \$30.59/gross sq ft. These figures are for facilities erected in the past year, or in the case of the Florida La Petite facility, have been escalated to current levels; to facilitate comparison with Army requirements and experience, these amounts are exclusive of site costs. Comparison of the national organization headquarters experience yielded similar results, with a range of \$23.00/gross sq ft to \$70.00/gross sq ft for their planning costs, or an average of \$46.62/gross sq ft. Planning costs tend to be higher, since most organizations preferred to give conservative estimates.

#### *Alternative Construction and Acquisition Methods*

Except for Kinder-Care, all organizations surveyed follow conventional design and construction practices. Designers outside the organization, usually local A/Es, modify standard facility designs to meet the local code requirements and construction documentation packages. Construction packages are either bid, or in many cases, negotiated with contractors selected by the proprietary organization. With minor exceptions, construction is all conventional, site-built. Prefabricated components, such as roof trusses/joists and cabinetry, are used to varying extents, which is common construction practice. In most cases, either the organization itself or the hired A/E monitors construction, but sometimes construction management firms are used. Only the larger firms volume-purchase building materials, appliances, and equipment.

Kinder-Care's construction practices are also primarily conventional; however, it centrally prefabricates the basic structural system (the interior and exterior stud wall frames and all roof trusses) and ships them directly to the construction site. To accomplish such a high level of prefabrication, Kinder-Care has fine-tuned its standard plan to minimize changes required by variances in licensing and building code requirements (for a more complete description of how its plan is adaptable, see pp 60-61, 71). It deals with a limited number of regionally located fabricators; however, 80 percent of its wood frame prefabrication is with firms local to Montgomery, AL. A fabricator in Ohio supplies its metal framed or noncombustible systems. All other construction work is conventionally site-built. Kinder-Care also buys more materials in volume than any other organization, not only purchasing cabinetry, and appliances, but also basic building materials, such as interior wall finishes, paint, floor and ceiling tile, carpet, heating and air-conditioning equipment, plumbing fixtures, and others. These materials are centrally ordered, warehoused, and directed to the appropriate site locations as required.

#### *Facility Functional Requirements*

In the initial limited survey, all organizations indicated that they provided the same primary activity spaces as the Army. Both primary and some secondary activity spaces are provided for in the facility net square footage, which for proprietary facilities, is regulated by licensing code and roughly equivalent to Army criteria. The main differences between Army and proprietary facilities were in the quantity of space provided for secondary activity spaces and nonprogram spaces. Tables 8 and 9 outline these differences, with the major ones discussed in the following sections.

Crib. Crib space was most often included in the facility's net space, because many of the codes required a higher net space allowance for infants. Where codes did not require additional space, some organizations added enough space to accommodate both the crib and circulation space around it.

Diaper Station. Quoted allowances/space provisions for the diaper station were for the size of the counter space only. No extra circulation space was provided adjacent to or around the diaper station.

Classroom Reception and Care. Most organizations provided for the function of classroom reception and care, but did not allow additional space. Storage for caregivers' personal items was either in existing classroom storage or some other central location. The most recent facility standard design of Kinder-Care was the only one to provide additional space.

Offices. Office space was generally far less than that required by the Army. There was typically only one office for the director, averaging only 100 sq ft versus 350 sq ft for all office needs of a similar-sized Army facility. In one case, the director's office at a Children's World facility was 230 sq ft, but it also served as the isolation and staff lounge area.

Staff Lounge. Staff lounges were provided in less than half of the centers visited and were far smaller than the Army's, averaging only 83 sq ft and serving 20 to 25 staff members. Army criteria for similar-sized centers and staff would be 1200 to 1500 sq ft at 60 sq ft/staff member or 14 to 18 times that of the proprietary facilities.

Kitchen. Kitchen allowances ranged from 1.04 to 1.7 sq ft/child, or an average of 1.42 sq ft/child versus the Army allowance of 2.25 sq ft/child. For the typical center with a 130-child capacity, proprietary allowances would require a kitchen ranging from 135 to 221 sq ft versus Army criteria of 293 sq ft for an increase range of 33 to 117 percent over proprietary facilities.

Maintenance/Janitor. When provided as a separate space, proprietary allowances for maintenance and janitorial functions were similar to those of the Army; however, most facilities provided them as part of other spaces, typically a central storage, mechanical, or laundry space.

Mechanical/Electric. Mechanical and electric rooms and closets were usually only 17 percent of that allowed for Army facilities. Most heating and air-conditioning systems were small single-zone through the wall or roof-mounted systems to save on mechanical space. Interior mechanicals were limited to air-handling units, water heaters, and electrical closets. In some cases, where codes required sprinkler systems, sprinkler closets were provided but none were observed at the centers visited.

### **Comparison of Army and Proprietary Facilities**

The following discussion focuses on the major differences noted when Army and proprietary methods were compared.

Tables 6 through 9 summarize key state licensing requirements, building construction code requirements, and facilities space allowances to compare them with Army requirements.

#### **Construction Materials**

The field investigations showed many differences between the Army and proprietary child care facilities, both in basic construction methods and in the materials and equipment used. These differences were more pronounced in some centers than in

others; however, most proprietary centers used much less costly materials and methods than Army centers. The proprietary centers were typically built with wood- or light-gauge steel structural systems, and used residential or light commercial quality building materials, equipment, mechanical systems, cabinetry, and finishes. It is assumed that selection of lesser-quality materials is directly related to the organizations' investment strategies. They are most likely depreciating their facilities over a 15-year investment period, because they know that the demographics in their facilities' locations will change, thus reducing demand for their services; as a result, they are not interested in a longer facility life. On the other hand, Army centers are normally built with more durable materials and equipment that emphasize a life-cycle cost based on permanent construction or a 30-year anticipated life.

### *Life Safety Code*

Comparison of life-safety code requirements between the Army and proprietary facilities identified major differences. For proprietary child care facilities of the sizes and configurations investigated in this study, there were no code restrictions on the type of construction allowed. Life safety requirements were specified for each construction type, with proprietary organizations selecting the most economical construction method, then designing to meet the applicable local code requirements. Although these codes varied among locations, most were much less restrictive than the National Fire Protection Association (NFPA) requirements on which the Army's requirements are based.

The Army requires a specific construction type, Noncombustible (UBC Type II-N), and is also more restrictive in other areas as well than requirements of the NFPA. The Army has taken this conservative position on fire safety to make its facility requirements "equivalent" to NFPA requirements, since they do not, for operational purposes, meet the care-giver ratios on which the NFPA requirements are based. However, most of the proprietary facilities investigated also do not meet these ratios. This is usually because they are constructing to codes that are not based on NFPA criteria in which no care-giver ratios are specified. Instead they follow the ratios specified by state licensing codes. Where they have to meet NFPA requirements or codes based on NFPA, they have been granted construction and occupancy permits by local code and licensing agencies by other means of establishing "equivalency."

Table 6

**Code Criteria Comparisons: State Licensing and Life Safety Code Requirements  
Vs. Army Requirements (For States of Selected Centers)**

Agency:	Army	California	Florida	Illinois	Texas
<b>Criteria:</b>					
Min Net Area/CH Indoor Area (SF) Outdoor Area (SF)	35 100	35 75	20 45	35,55 (1) 75	30 80
<b>Care Giver Ratio &amp; Maximum Group Sizes: (Age Groups by Agency Definition)</b>	Age 6w-18m 10 18m-3y 16 3-5y 20 5-9y 30 9-12y 36 Mix (2)	Age 0-2y 1:4 2-12y 1:12(4) 3-4y 1:5(3) 4-6y 1:7(3) 6-16y 1:10(3)	Age 0-1y 1:6(5) 1y 1:8(5) 2y 1:12(5) 3y 1:15(5) 4y 1:20(5) 5y 1:25(5)	Age 6w-15m 1:4(6) 6w-2y 1:4 15m-2y 1:5 2y 1:8 2-4y 1:8 2-5y 1:8 3y 1:10 3-5y 1:10 4y 1:10 4-6y 1:10 6y on 1:20	Age 0-11m 1:5,2:12 12-17m 1:6,2:14 18m-2y 1:9-10 2y 1:11-13 3y 1:15-17 4y 1:18-20 5y 1:22-24 6y on 1:26
<b># Toilets/Lavatories: (Ratio Toilets/ Lavs:Child)</b>	Age 6w-18m 1 Adult 18m-3y 1:8 3-5y 1:15 5-12y 1:8	1:1-14 first 14 1:10 thereafter	1:1-15 first 15 1:30 thereafter	1:1-10 first 10 1:11-15 next 15 1:25 thereafter	1:17
<b>Barrier Free Environ:</b>	Accessible to Children and Adults	NS	NS	Children (7)	NS
<b>Life Safety:</b>			(State Fire Code)(9)	(State Fire Code)(9)	
Floor Area Limits (SF)	13,500(8) (UBC II-N)	-Life safety issues not specified in state licensing requirements. Local requirements apply.	No limit if Type I	Single story	Single story, or approval (3-minute egress)
Height Limitation	Single story		2 required	2 required	2 required
Exits	2 required		2 exits required	NS	
#s/Floor Area	1 required		Not specified	4 ft min	-Remaining life safety issues not specified in licensing code.
Direct from Class	6 ft min		150 ft (+50 if sprinkled)	150 ft	
Exit Access Contr. Width			-Requirements vary w/construction type. No type specified.	-Requirements vary w/construction type. No type specified.	
Exit Travel Distance	150 ft (+50 if sprinkled) (UBC II-N)				
Fire Resistive Reqts	No requirement				
Structure	No requirement				
Ext. Walls-Nonbearing	No requirement				
Int. Walls-Nonbearing	No requirement				
Roof	No requirement				
Floors	No requirement				
Ext. Doors/Windows	No requirement				

Table 6 (Cont'd)

Agency:	Army	California	Florida	Illinois	Texas
Fire Separation (hrs)					
Area Separation	2 hrs		by local code	Not specified	
Means of Egress	1 hr		1 hr min.	1 hr min.	
Hazard Separation	1 hr		Not specified	45 minutes	
Exit Access Corr	Not req'd w/Dir Egress		Not specified	45 minutes	
Other	Classroom, 1 hr				
Interior Finish				(noncombustible)	
Wall	Class A or B		Class A or B	Class NS	
Floor	Class I or II		by local code	Class NS	
Sprinkler	Required in hazard areas		Required in hazard areas	Optional	
Alarm System					
To Fire Station	Required		No requirement	Required (10)	
Internal Only	Excluded		Required	Small centers < 20	
Manual	Manual override		Required	Manual override	
Automatic	Required		Required	Required	
Smoke Detector	Required		Required	Required	
Construction Type	Noncombustible UBC Type II-N		All Types I-V if limited to 1-story		

(1) Illinois requires additional space for infants to accommodate cribs.

(2) Army requires mixed ages to adhere to ratio/group sizes requirement of lowest age unless they constitute less than 20 percent of the group, then the next highest age requirements apply.

(3) California requirements if facilities are federally funded/assisted.

(4) Average for age group in entire center.

(5) Florida increases staff requirement by 50 percent if handicapped children are involved.

(6) Illinois requires a 1:4 ratio for "children of special need" when cared for in a group.

(7) Illinois requires that "building and equipment be designed so that special need children can make maximum use of the facility" if they are accepted into the program. Accessibility is not required.

(8) UBC allows area an increase (200%) if a facility is sprinkled throughout. Army facilities are partially sprinkled in hazard areas only; however, this should allow a partial increase. The largest Army Center anticipated of approximately 300 children 77.5 gross SF/CH = 23,250 SF, would only require a 75 percent increase in allowable area to be within the area limitation vs. the 200 percent allowed for a totally sprinkled facility. Other increases are allowed for separation from adjacent facilities.

(9) Local codes may be more restrictive.

(10) Connection to fire station not required if facility is totally sprinkled. Manual system still required.

General Note: Most states do not specify life safety requirements except for certain minimum criteria, deferring instead to local jurisdiction requirements. They do, however, require adherence to local requirements as a prerequisite to licensing.

Table 7

# Code Criteria Comparison: Local Life Safety Code Requirements Vs. Army Requirements (For Locations of Selected Centers)

Agency:	Army (CONUS/OCONIUS)	California (Chino)	Florida (Jacksonville)	Illinois (Orland Park)	Texas (Carrollton)
Criteria:					
Life Safety:					
Floor Area Limit (SF)	13,500 (1) (UBC II-U)	Not specified	Not specified	Varies w/const type	Varies w/const type
Height Limitation	Single story	Varies w/const type	Varies w/const type	Varies w/const type	Single story
Exits					
# of Floor Area	2 required	2 required	2 required	2 required	2 required
Direct from Classroom	1 required	Not required	2 exits required	1 required	Not required
Exit Access Corr. Width	6 ft min.	6 ft min.	Not specified	6 ft min.	6 ft min.
Exit Travel Distance	150 ft (+50 if sprinkled)	150 ft (+50 if sprinkled)	150 ft (+50 if sprinkled)	150 ft (+50 if sprinkled)	150 ft (+50 if sprinkled)
Fire Resistive Reqts	(UBC II-N)	Varies w/const type	Varies w/const type	Varies w/const type	
Structure	No requirement				No requirement
Ext. Walls-Nonbearing	No requirement				No requirement
Int. Walls-Nonbearing	No requirement				No requirement
Roof	No requirement				No requirement
Floors	No requirement				No requirement
Ext. Doors/Windows	No requirement				Allowed w/10 ft sep.
Fire Separation (Hrs)					
Area Separation	2 hrs	V-1 hr, III-4 hrs	Not specified	Not specified	V-1 hr, III-4 hrs
Means of Egress	1 hr	1 hr min.	1 hr min.	1 hr min.	1 hr min.
Hazard Separation	1 hr	1 hr	Not applicable	1 hr	1 hr
Exit Access Corr.	No req'd w/Dir Egress	1 hr	Not applicable	0 hr if direct exit	1 hr
Other	Classroom, 1 hr				
Interior Finish					
Wall	Class A or B	II or III (UBC)	Class A, B, or C	I or III (BOCA 920)	II or III (UBC)
Floor	Class I or II	Not specified	Not specified	Not specified	Not specified
Sprinkler	Required, hazard areas	Not required	Required, hazard areas	Not required	Not required
Alarm System					
To Fire Station	Required	Not required	Not required	Not required	Not required
Internal Only	Excluded	Required	Required	Required	Required
Manual	Manual override	Not required	Required	Not required	Not required
Automatic	Required	Required	Required	Required	Required
Smoke Detector	Required	Not required	Required	Required	Not required
Construction Type	Noncombustible	Not specified	Not specified	Not specified	Not specified
	UBC Type II-N				

(1)UBC allows an area increase (200%) if a facility is sprinkled throughout. Army facilities are sprinkled in hazard areas only; however, this should allow a partial increase. The largest Army Center anticipated of approximately 300 children @ 77.5 gross SF/CH = 23,250, would only require a 75 percent increase in allowable area to be within the area limitation vs. the 200 percent increase allowed for a totally sprinkled facility. Other increases are allowed for separation from adjacent facilities.

Table 8

**Planning Criteria Comparison: Proprietary Organization Vs. Army Requirements  
(Headquarters provided average experience and planning allowances)**

Agency:	Army	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
<b>Criteria:</b>						
<u>General</u>						
Center Size (SF)	5,500-23,000 GR SF	5,000-6,000 GR SF	7,300-8,300 GR SF	4,820 GR SF	8,000-10,000 GR SF	5,000-7,400 GR SF
Capacity - # Children	60-303	80-140	152-300	100	150-200	100-200
Net SF/CH	20 SF < 1.5 yrs 35 SF > 1.5 yrs	35-50	Code 25-35	Code (30 ave)	Code (30 ave)	35
Gross SF/CH						
-Indoors SF/CH	78 SF	Varies	50 SF	33-35 SF	53-57 SF	40
-Outdoors SF/CH	95 SF (Sml Ctrs) 50-200 SF min. 100-200 Recom. 1:2.14 Normal Adult/Ch Access	70-75 SF	75 SF	75 SF	70-80 SF	100
Net/Gross SF/CH Ratio		1:1.4-2.14	1:1.43-1:2.00	1:1.73	1:1.77-1.9	1:1.14
Barrier-Free Envir.	Adult/Ch Access	Adult Access	Adult/CH Access	Not provided	Adult/CH Access	Adult/CH Access
\$Gross/SF (4)	\$80	\$50-70 Bldg Only (3)	\$65-74 (1)	\$39-41 (1) (3)	\$23-28 (2)	\$47-55 (3)
<u>Allowances-SF</u>						
Secondary Activity		-Allowances not provided by Children's World headquarters	-Allowances not provided by Day Bridge headquarters	-Allowances not provided by Gerber headquarters	Incl. in net	Incl. in net
-Eating	Incl. in net				Incl. in net	Incl. in net
-Napping	Incl. in net				Incl. in net	Incl. in net
-Crib	28.6 SF/crib				Incl. or 31.5 SF/crib	Incl. in net
-Diaper Station	40 SF ea				30 SF ea	13.56 SF ea
-Toilets	2-2.75 SF/CH				.21-.41 SF/CH	.3-.6 SF/CH
-Cubbies	1-2.5 SF/CH				1 SF ea	Incl. in net
-Classroom Recept/Care	64 SF/Home Base				28 SF ea	Incl. in net
<u>Administration Spaces</u>						
-Waiting/Recept	100-160 SF				100 SF	137 SF
-Offices						
-Director	100 SF				90 SF	57 SF
-Staff	100 SF/100 CH				Not provided	Not provided
-CDC Coordinator	100 SF				Not provided	Not provided
-Staff Lounge	150 SF min. or 60 SF/Staff				76 SF	Not provided
-Central Storage	40 SF min. or .5 SF/CH				or 5.85 SF/Staff	45 SF
-Isolation	50 SF min.				56 SF	or .34-.68 SF/CH
-Adult Toilets	80 SF min.				or .28-.37 SF/CH	60 SF
-Other					40 SF	27 SF
Support Spaces					38 SF Vestibule	
-Kitchen	.25 SF/CH				1-1.33 SF/CH	.75-1.5 SF/CH
-Receiving	.5 SF/CH				Incl. in kitchen	Incl. in kitchen
-Cold/Dry Storage	1 SF/CH				.5-.67 SF/CH	.2-.4 SF/CH
-Cook/Cleaning	35 SF min. or .5 SF/CH				Incl. in kitchen	Incl. in kitchen



Table 8 (Cont'd)

Agency:	Army	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
-Cook/Cleaning	35 SF min. or .5 SF/CH	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen
-Laundry	35 SF min. or .4 SF/CH	Not provided	Not provided	30 SF or .24 SF/CH	38 SF or .22 SF/CH	Not provided
-Maintenance/Janitor	32 SF min. + 70-100 SF if facil > 7,000 SF	35 SF	34 SF	Not provided	18 SF	23 SF
-Mechanical/Electrical	3.3% facil GR or 2.5 SF/CH	100 SF (12 GR SF) or .74 SF/CH	91 SF (12 GR SF) or .7 SF/CH	7.5 SF (.24 GR SF) or .06 SF/CH	65 SF (.82 GR SF) or .38 SF/CH	Incl. in Maint/Jan (roof top system)
Primary Outdoor -Porches/Decks	50 SF min. or 1 SF/CH	486 SF or 3.57 SF/CH	2,850 SF or 22 SF/CH	1,475 SF or 12 SF/CH	190 SF or 1.12 SF/CH	324 SF 2.7 SF/CH
-Play Yards	500-2,000 SF or 50-100 SF/CH	18,400 SF or 135 SF/CH	12,075 SF or 93 SF/CH	15,000 SF or 120 SF/CH	10,310 SF or 61 SF/CH	11,494 SF or 96 SF/CH
Secondary Outdoor -Porte Chochoere	300 SF min. 600-750 SF recom.	80 SF	315 SF	875 SF	88 SF	Not provided
-Pedestrian Walks	Varies	Not available	405 SF	1,400 SF	Not available	1,302 SF
-Vehicular Circulation	Varies	Not available	11,025 SF	NA	Not available	9,086 SF
-Service Areas/Drives	Varies	Not available	Incl. in above	NA	Not available	Incl. in above

NA = Not applicable.

Not provided = Element not provided in child center.

Not available = Information not available from site survey.

- (1) Licensed capacity, actual occupancies experienced averaged 75 percent of maximum.  
 (2) Available net + licensed capacity (operating net due to operation at less than maximum capacity, if higher)  
 (3) Gross SF + licensed capacity.  
 (4) Play Yard SF + licensed capacity.  
 (5) Licensed capacity [actual capacity].  
 (6) Actual capacity [actual capacity].  
 (7) Based on 35 net: 78 gross.  
 (8) All facility costs: building, site work and playground, exclusive site cost.

Table 9

**Planning Criteria Comparison: Proprietary Organization Vs. Army Requirements  
(Actual Centers' Experience)**

Agency:	Army	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
<b>Criteria:</b>						
<b>General</b>						
Center Size (SF)	5,500-23,000 GR SF	7,200 GR SF	8,273 GR SF	4,820 GR SF	7,993 GR SF	4,660 GR SF
Capacity--J Children (1)	60-303	136 [90] (5)	130 [69] (5)	125 [106] (5)	170 [153] (5)	120 [95] (5)
Net SF/CH (2)	20 SF < 1.5 yrs 35 SF > 1.5 yrs	35 [35] (6)	45 [35]	21 [20] (6)	33 [30] (6)	27 [20] (6)
Gross SF/CH						
-Indoors SF/CH (3)	78 SF	53 SF	64	39	47	39
-Outdoors SF/CH (4)	95 SF (Sml Ctr)	135 SF	93	120	61	96
Net/Gross SF/CH Ratio	100-200 recom.					
Barrier-Free Envir.	1:2.23 (7)	1:1.43	1:1.42	1:1.86	1:1.42	1:1.63
\$Gross/SF (8)	Adult/CH access \$80	Not provided \$51.53	Adults \$54.11	Adults \$43.15	Adults \$27.17	Adult/CH access \$28.54
<b>Allowances</b>						
<b>Secondary Activity</b>						
-Eating	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net
-Napping	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net	Incl. in net
-Grib	28.6 SF/Chlb	31.5 SF ea	Incl. in net	Incl. in net	Incl. in net	No infants
-Diaper Station	40 SF ea	16 SF ea	Incl. in net	16 SF ea	16 SF ea	17 SF ea
-Toilets	2-2.75 SF/CH	2.35 SF/CH	2.11 SF/CH	.22 SF/CH	2.89 SF/CH	.68 SF/CH
-Cubbies	1-2.5 SF/CH	Incl. in net	Incl. in net	Incl. in net	1 SF/CH	1 SF/CH
-Classroom Receipt/Care	64 SF/Home Bs	Not provided	Incl. in net	6.72 SF/CH Grt Ra	Not provided	Not provided
<b>Administration Spaces</b>						
-Waiting/Recept	100-160 SF	230 SF	195 SF	143 SF	250 SF	137 SF
-Offices						
-Director	100 SF	230 SF	95 SF	161 SF	85 SF	57 SF
-Staff	100 SF/100 CH	Not provided	Not provided	Not provided	Not provided	Not provided
-CDC Coordinator	100 SF	Not provided	Not provided	Not provided	Not provided	Not provided
-Staff Lounge	150 SF min.	Space in Dir. Off.	Not provided	77 SF	88 SF	Not provided
-Central Storage	or 60 SF/Staff	Space in Dir. Off.	93 SF	or 4 SF/Staff	or 4.6 SF/Staff	45 SF
-Isolation	40 SF min.	140 SF	or .72 SF/CH	44 SF	38 SF	or .57 SF/CH
-Adult Toilets	50 SF min.	Space in Dir. Off.	53 SF	or .35 SF/CH	or .22 SF/CH	Space in Dir. Off.
-Other	80 SF min.	40 SF	36 SF	In Staff Lounge	56 SF	27 SF
<b>Support Spaces</b>						
-Kitchen	.25 SF/CH	1.41 SF/CH	1.19 SF/CH	.86 SF/CH	.88 SF/CH	1.73 SF/CH
-Receiving	.5 SF/CH	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen	Incl. in kitchen
-Cold/Dry Storage	1 SF/CH	.29 SF/CH	.29 SF/CH	.29 SF/CH	.16 SF/CH	Incl. in kitchen

AD-A158 628

ALTERNATIVE CONSTRUCTION AND ACQUISITION METHODS FOR  
DEPARTMENT OF THE AR. (U) CONSTRUCTION ENGINEERING  
RESEARCH LAB (ARMY) CHAMPAIGN IL R L SCHNEIDER JUN 85

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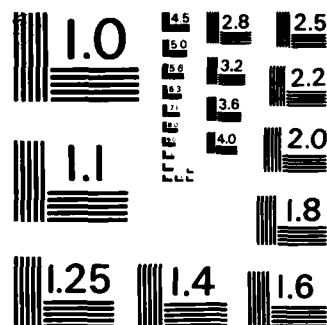
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NATIONAL BUREAU OF STANDARDS-1963-A

Table 9 (Cont'd)

Agency:	Army	Children's World	Day-Bridge	Gerber	Kinder-Care	La Petite
-Laundry	35 SF min. or .4 SF/CH				30 SF or .15-.2 SF/CH	12.5 SF or .06-.13 SF/CH
-Maintenance/Janitor	32 SF min. + 70-100 SF if facil > 7,000 SF				30 SF	23 SF
-Mechanical/Electric	3.3% facil CR or 2.5 SF/CH				120 SF (1-1.5% CR) or .6-.8 SF/CH	Incl. in Maint/Jan
Primary Outdoor -Porches/Decks	50 SF min. or 1 SF/CH				1,000-2,000 SF or 5-13 SF/CH	860 SF 4-8 SF/CH
-Play Yards	500-2,000 SF or 50-100 SF/CH				12,000-13,000 SF or 60-87 SF/CH	11,500 SF 58-115 SF/CH
Secondary Outdoor -Porte Chochoere	300 SF min. 600-750 SF recom.				90 SF	Not provided
-Pedestrian Walks	Varies				Varies	Varies
-Vehicular Circulation	Varies				Varies	Varies
-Service Area/Drives	Varies				Varies	Varies

(1) Quoted cost for planning purposes.

(2) Based on quoted lump sum cost of \$30,000 total facility less 31 percent average site cost from backup cost data divided by preferred facility size range.

(3) No backup cost data provided.

(4) All costs excluding site unless otherwise noted.

### *Functional Design Criteria*

Functional design requirements and criteria used by proprietary facilities were compared to those of the Army, and showed major differences in the areas of secondary and nonprogram spaces. Proprietary organizations were mostly very conservative in allowances for secondary or nonprogram space, providing only the net activity space required by the licensing codes and the minimum amount of additional space needed to make a functional facility.

## **7 CONCLUSIONS AND RECOMMENDATIONS**

Use of alternative construction technologies and acquisition methods is one way to reduce the cost of building new child care centers. Selection of the best method will produce a facility that is easy to build, functional, and usable. One-Step Competitive Negotiation is the best procurement method to use for DA Child Care Centers, because it offers the advantage of basing contractor selection on factors other than construction costs. This method will often provide facilities that exceed design standards and provide the best value to the Government.

The construction technologies and acquisition methods deemed to be most feasible for building DA Child Care Centers are metal-frame modular construction, pre-engineered metal building systems, and metal-frame components because they are the most responsive to most Army requirements.

Guidance for implementing and executing the various alternative construction strategies emphasizes good preparation and scheduling, communication with and participation by the facility user, and good organization of the overall process to ensure timely, cost-effective project completion.

Comparison of Army and proprietary facilities has led to the following conclusions and recommendations:

The biggest difference between Army and proprietary facilities is the gross square footage allowed per child, with the Army allowing more space. National standards prepared by the Department of Health and Human Services are expected to address and standardize SF criteria during FY 85.

Most Army functional and space requirements which exceed provisions of the private sector are valid due to differing program requirements, but there are areas where provisions may be considered excessive. It is therefore recommended that the differences identified in this report be evaluated to confirm or recommend changes in Army criteria.

Private centers have a shorter facility investment period and therefore use less costly materials and equipment than the Army. This investigation did not gather detailed data on or evaluate the differences in construction materials and costs between Army and proprietary facility construction. Therefore, it is recommended that these differences be further studied to determine where the differences occur, the cost ramifications, and whether the less expensive materials and methods used by the proprietary facilities meet life-cycle cost criteria for Army construction and are therefore a better value.

Army Life Safety Standards are much more conservative than those of private facilities. Further study is recommended to (1) verify NFPA requirements as the valid level of life safety for constructing DA child development centers by comparing them to the predominant safety level provided for private facilities, (2) determine whether the Army's current means of establishing "equivalency" to NFPA requirements are valid compared to those used in the private sector, and (3) determine whether there are other, more economical construction types (for example UBC type Type III-1 Hr) equally capable of ensuring safety, while providing a better value to the Government.

The Office of the Chief of Engineers will be selecting one DA child development center from the FY85 or FY86 program to demonstrate acquisition via a One-Step procurement approach. It is therefore recommended that (1) a prototype RFP package complete with the necessary performance specifications and evaluation criteria be developed and (2) that the procurement process itself be monitored and complete "lessons learned" compiled.

The volume purchase of required furnishings and basic expendable materials is practiced by all private centers to achieve operation cost savings. Often, this practice extends to materials required for new centers such as basic construction materials, interior finishes, appliances, mechanical equipment, and other items. Although the Army is a major purchaser in all the above areas, volume purchase cost savings on building materials are normally only accrued through the competitive bidding process within the scope of a single project. Therefore, it is recommended that the Army as a minimum utilize volume purchase practices to obtain basic furnishings, materials, and equipment necessary to operate their centers, including required appliances, all of which can be separated from individual project costs and obtained through General Services Administration (GSA) contracts. Many of these items would be applicable to existing centers and other facility types or other Services requirements. In addition, the Army should pursue volume purchase of construction materials either across project bounds or through the consolidation of required facilities in a single project.



### METRIC CONVERSION FACTORS

$$1 \text{ sq ft} = .09 \text{ m}^2$$

$$1 \text{ ft} = .3 \text{ m}$$

$$1 \text{ in.} = 25.4 \text{ mm}$$

$$1 \text{ lb/sq ft} = 4.88 \text{ kg/m}^2$$

$$1 \text{ mph} = 1.6 \text{ km/hr}$$

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- Procurement Procedure Manual for One-Step "Turnkey" Negotiated Contract for Army Family Housing* (OCE, DAEN-ECE-A, June 1980).
- Recommendations for Child Care Centers* (Community Design Center, Inc., and Center for Architectural and Urban Planning Research, University of Wisconsin, Milwaukee, WI, 1979).
- TM 5-812-1, *Fire Prevention Manual* (HQDA, 1 April 1977).
- The *BOCA Basic Building Code*, 1981 ed. (Building Officials and Code Administrators, Inc., 1981).
- The *Uniform Building Code*, 1982 ed. (International Conference of Building Officials, 1982).

## **APPENDIX A:**

### **U.S. ARMY CHILD DEVELOPMENT SERVICES FACILITIES, ALTERNATIVE CONSTRUCTION METHOD ANALYSIS**

Generic building construction technologies and methodologies were evaluated to determine their responsiveness to Army requirements. Critical Army building characteristics were listed which paralleled those identified for evaluation of proprietary organization facilities, and Army requirements for each characteristic were then identified. The capabilities of each alternative construction method were identified and its responsiveness to the Army requirement determined. The following building construction technologies and methodologies were considered (for complete definitions, see Chapter 2):

1. Modular Building Systems
  - a. Wood-Frame Modular Construction
  - b. Metal-Frame Modular Construction, Table A1
  - c. Precast Concrete Modular Construction
2. Pre-engineered Building Systems
  - a. Pre-engineered Metal Building Systems, Table A2
  - b. Precast Concrete Building Systems
3. Component Construction
  - a. Wood-Frame Components
  - b. Metal-Frame Components, Table A3
  - c. Precast/Prestressed Concrete Components

Tables A1, A2, and A3 display evaluations of alternatives determined to be most feasible for DA child development centers. Other evaluations have been excluded for the following reasons:

1. Wood-frame systems (modular or component) do not meet current Army life safety criteria and have therefore been excluded from analysis. The Army currently requires noncombustible construction equivalent to the Uniform Building Code Construction (UBC) Type II-N. This code allows no combustible materials in any of the major building elements: structure, exterior wall bearing or nonbearing, interior wall bearing or nonbearing, roof, floor, and exterior doors and windows. Wood-frame systems could not be made responsive; however, wood-framing materials could be used for some building elements and still meet the code. UBC allows the use of fire-retardant-treated lumber in nonbearing interior partitions where those partitions are fire-rated (UBC Types II-FR and II-1HR). Except for their combustibility, characteristics of wood-frame systems would be identical to those displayed in Tables A1 and A3 for metal-frame systems.

2. Concrete systems (modular, pre-engineered, or components) are excluded due to their cost. They would not be competitive with the other systems and are therefore deemed nonresponsive.

**Table A1**  
**Metal-Frame Modular Construction**

**Responsiveness to  
U.S. Army Requirements**

**Alternative Construction  
Method Capabilities**

**Army Requirements**

**1. Architectural**

a. Building Configuration: "Efficient design" for economical construction; typically rectilinear.

Rectilinear configurations typical; rectangles, staggered rectangles, T's, L's, etc.

Should be responsive.

b. Interior Spaces: Enclosed age group activity modules and offices; open activity areas; food preparation and building service cores (toilets, custodial, mechanical). 8-ft planning grid preferred.

Enclosed spaces are typically by partitioning within modules. Open areas are typically with adjacent opensides modules.

Should be responsive.

c. Clear Span/Area Dimensions:

(1) Enclosed space: about 290 sq ft with minimum room dimension of 12 ft.

Typical modules are 12 ft wide with interior clear dimensions of 11 ft-4 in. Wider room dimensions possible but less convenient.

Can be responsive to 12 ft minimum room dimensions; 11 ft-4 in. would be more convenient and economical.

(2) Open areas: no designated open area square footage. Columns are tolerable within open areas. All minimum dimensions within open areas are 12 ft or less.

Open areas are achieved with adjacent open-sided modules. Widths up to 60 ft are typical, possibly with columns.

Should be responsive.

d. Partitioning: throughout building.

No inherent limitations on location of partitions; most convenient to place on module line.

Should be responsive.

Table A1 (Cont'd)

Alternative Construction U.S. Army Requirements	Responsiveness to Method Capabilities	U.S. Army Requirements
e. Ceiling Height: 8-ft maximum throughout building.	7 ft-6 in. and 8-ft ceilings typical.	Should be responsive.
f. Number of Stories: One.	One- and two-story buildings typical.	Should be responsive.
g. Accommodation of Plan Features:		
(1) Building entrances: any location at building perimeter.	No inherent limitations on location or type of entrance.	Should be responsive.
(2) Emergency egress: throughout building perimeter.	No inherent limitations on location or type of emergency exits.	Should be responsive.
(3) Windows: throughout building perimeter.	No inherent limitations on location or type of windows.	Should be responsive.
(4) Food preparation area: central location.	No inherent limitations on location of food preparation or other "wet" areas. Preferable to cluster plumbing and building utilities.	Should be responsive.
(5) Toilet facilities: various locations within building.	No inherent limitations on location of toilet areas. Preferable to cluster plumbing and building utilities.	Should be responsive.
(6) Mechanical: any location at building perimeter; access to exterior only.	No inherent limitations on location of mechanical space.	Should be responsive.
h. Aesthetics: "harmonious with the existing permanent structures."		

Table A1 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(1) Building form, proportions: typically rectangular; gable, hip, or shed roof lines.	Typically residential in scale and proportions; rectilinear building form. Gable, hip, or shed roof lines common.	Should be responsive.
(2) Exterior materials: typically brick, stucco, siding.	Typically sheet or lap siding; stucco or masonry veneer can be installed on-site. Typically shingle roofing; metal ribbed roofing; simulated tile roofing, etc., also possible.	Should be responsive.
i. Interior Construction:		
(1) Finishes: floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic.	Walls typically vinyl-faced gypsum board or painted gypsum board. Carpet or sheet vinyl wainscot possible. Ceiling and floor finishes as required by user.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
(2) Other features: casework, platforms, dividers.	Interior features provided per user's requirements.	Should be responsive.
j. Noise Control: peak levels - 85 dBA; sustained levels - 45 dBA; no specific noise control measures identified.	Interior noise control measures similar to conventional construction practices.	Should be responsive; attention must be paid to acoustics in design.
k. Handicapped Provisions: building access per ANSI A117.1.	No inherent limitations to building access.	Should be responsive.

Table A1 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
2. Fire Safety:		
a. Floor Area Limitations: 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus).	No inherent limitations regarding fire areas; area separation walls possible.	Should be responsive; most centers will not require area separation.
b. Height Limitation: One story.	One story typical.	Should be responsive.
c. Exits:		
(1) Numbers required: 2 per each fire area; plus 1 each room used as child activity space.	No inherent limitations on numbers or locations of exits.	Should be responsive.
(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
(3) Travel distance: 150 ft maximum + 50 ft is sprinkled.	No inherent limitations.	Should be responsive.
d. Fire-Resistive Requirements: 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior doors and windows.	Light-gauge metal structural framing fully meets Army requirements of "Noncombustible" construction (UBC II-N).	Should be responsive.



Table A1 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
<b>e. Fire Separation:</b>		
(1) Fire areas: 2 hr.	2-hr wall possible with light-gauge metal-stud wall and X-type gypsum board (2 layers, 5/8 in. each side).	Should be responsive.
(2) Means of egress: 1 hr.	No inherent limitation on separation of means of egress; 1-hr wall possible with light-gauge metal-stud wall and X-type gypsum wall board (1 layer, 1/2 in. each side) or regular gypsum wall board (1 layer, 3/8 in. each side).	Should be responsive.
(3) Hazard separation: 1 hr.	No inherent limitation on hazard separation; 1-hr wall possible with light-gauge metal-stud wall and X-type gypsum wall board (1 layer, 1/2 in. each side) or regular gypsum wall board (1 layer, 3/8 in. each side).	Should be responsive.
(4) Exit access corridor: 0 hr. No rating required with direct access.	NA	NA
(5) Others: classroom 1 hr.	No inherent limitation on other fire separation; 1-hr wall possible with light-gauge metal-stud wall and X-type gypsum wall board (1 layer, 1/2 in. each side) or regular gypsum wall board (1 layer, 3/8 in. each side).	Should be responsive.
<b>f. Interior Finishes:</b>		
(1) Wall: Class A or B.	Interior finishes provided per users' requirements.	Should be responsive.

Table A1 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(2) Floor: Class 1 or 11.	Interior finishes provided per users' requirements.	Should be responsive.
g. <u>Sprinkler</u> : Required in hazard areas (custodial closet).	Sprinklers can be installed per conventional construction practices.	Should be responsive.
h. <u>Alarm</u> : direct linkage to fire station required. Manual and automatic alarm with smoke and heat detectors.	Alarm systems can be installed per conventional construction practices.	Should be responsive.
3. <u>Structural</u>		
a. <u>Live Loads</u> : Per ANSI A58.1.	Structural design is per local conditions and code requirements. Army requirements are comparable.	Should be responsive.
(1) Vertical (Roof): 45 lb/sq ft (CONUS).		
(2) 40 lb/sq ft classroom, 100 lb/sq ft corridor.		
(3) Wind: 80 mph (CONUS).		
(4) Seismic: Zone 4.		
b. <u>Dead Loads</u> : As required.	Design as required.	Should be responsive.
4. <u>Quality and Durability</u>		
a. <u>Exterior</u> : "durable low maintenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements. All material qualities can be per users' requirements similar to conventional construction.	Should be responsive.

Table A1 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
b. <u>Thermal Envelope</u> : Solar and Energy Budget Analyses required.		
(1) Roof:	Up to about $U = .03$ , depending on roof structure.	Should be responsive.
(2) Walls:	Up to $U = .05$ typical.	Should be responsive.
(3) Floors: (over ventilated crawl space).	Up to $U = .05$ typical.	Should be responsive.
c. <u>Interior Construction</u> : "durable maintenance surfaces."	See 1j(1). Interior finish material qualities can be per users' requirements similar to conventional construction.	Should be responsive. Attention must be paid to high-abuse items in specification and design.
d. <u>Building Utilities</u> :		
a. <u>HVAC Systems</u> : per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.	HVAC design and installation per local conditions and code requirements. No inherent limitations on HVAC system.	Should be responsive.
b. <u>Plumbing Systems</u> : per DOD 4270.1M and TM 5-810-5.	Plumbing design and installation per local code requirements. Fixtures and equipment quality per users' requirements. No inherent limitations on plumbing system.	Should be responsive.
c. <u>Electrical Systems</u> : design per TM 5-811-1 with modifications. Lighting levels up to 50 fc.	Electrical design and installation per local code requirements. No inherent limitations on electrical systems.	Should be responsive.

Table A2

Pre-Engineered Metal Building Systems

Responsiveness to  
U.S. Army Requirements

Alternative Construction  
Method Capabilities

U.S. Army Requirements

1. Architectural

a. Building Configuration: "Efficient design" for economical construction; typically rectilinear.

b. Interior Spaces: Enclosed age group activity modules and offices; open activity areas; food preparation and building service cores (toilets, custodial, mechanical). 8-ft planning grid preferred.

c. Clear Span/Area Dimensions:  
(1) Enclosed space: about 290 sq ft with minimum room dimension of 12 ft.

(2) Open areas: no designated open-area square footage. Columns are tolerable within open areas. All minimum dimensions within open areas are 12 ft or less.

d. Partitioning: throughout building.

e. Ceiling Height: 8-ft maximum throughout building.

Rectangular building configurations typical; no limitation to range of configurations possible.

Enclosed spaces typical by partitioning within the structural framing system; open areas typical within/through open structural frame system.

Partitioning independent from structural system/grid layout; no limitation maximum/minimum on enclosed space.

Clear span capabilities in excess of open area requirements of child age group activity space modules; spans ranging from 40 ft to 100 ft typical in 4-ft, 5-ft, 8-ft, and 10-ft increments; column free area typical; spans to 200 ft clear possible.

No inherent limitations on location of partitions; most convenient to locate on planning modular/structural grid line.

8 ft-0 in. through 40 ft-0 in. possible.

Should be responsive.

Should be responsive.

Should be responsive.

Should be responsive.

Should be responsive.

Should be responsive.

Table A2 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
f. Number of Stories: One	One story typical, two stories possible.	Should be responsive.
g. Accommodation of Plan Features:		
(1) Building entrances: any location at building perimeter.	No inherent limitations on location or type of entrance.	Should be responsive.
(2) Emergency egress: throughout building perimeter.	No inherent limitations on location, configuration, or type of emergency egress.	Should be responsive.
(3) Windows: throughout building perimeter.	No inherent limitations on location, configuration, or type of windows.	Should be responsive.
(4) Food preparation area: central location.	No inherent limitations on location of food preparation or other "wet" areas; clustered plumbing and utilities preferred.	Should be responsive.
(5) Toilet facilities: various locations within building.	No inherent limitation on location of toilet areas; clustered plumbing preferred.	Should be responsive.
(6) Mechanical: any location at building perimeter; access to exterior only.	No inherent limitations on location of mechanical spaces.	Should be responsive.
h. Aesthetics: "harmonious with the existing permanent structures."	Typically more "commercial" in scale and proportions; rectilinear building forms; low slope 1/4 in.:12 in. to 4 in.:12 in. typical, higher slopes possible.	Can be responsive with use of reduced spans and higher gables to achieve more "residential" qualities.

Table A2 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(2) Exterior materials: typically brick, stucco, siding.	Typically pre-engineered; prefinished insulated metal panel/curtain wall system includes windows, doors, entry systems, and other elements; other finishes available, such as aggregate finished panels, but atypical.	Can be made responsive by substituting exterior finish materials per users' requirements.
i. <u>Interior Construction:</u>		
(1) <u>Finishes:</u> floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic.	No inherent limitations; typically excluded from pre-engineered systems so site-installed finishes may be provided to meet user requirements.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
(2) <u>Other features:</u> casework, platforms, dividers.		
j. <u>Noise Control:</u> peak levels - 85 dBA; sustained levels - 45 dBA; no specific noise control measures identified.	No inherent limitations; noise control measures similar to conventional design and construction practices.	Should be responsive; attention must be given to acoustics in design evaluation.
k. <u>Handicapped Provisions:</u> building access per ANSI A117.1.	No inherent limitations to handicapped building access.	Should be responsive.
2. <u>Fire Safety:</u>		
a. <u>Floor Area Limitations:</u> 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus).	No inherent limitations regarding fire area limits; area separation walls possible.	Should be responsive; most centers will not require area separation.
b. <u>Height Limitation:</u> One story.	One story typical.	Should be responsive.

Table A2 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
c. <u>Exits:</u>		
(1) Numbers required: 2 per each fire area, plus 1 for each room used as child activity space.	No inherent limitations.	Should be responsive.
(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
(3) Travel distance: 150 ft maximum + 50 ft is sprinkled.	No inherent limitations.	Should be responsive.
d. <u>Fire-Resistive Requirements:</u> 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior doors and windows.	Fully complies with Army "Non-combustible" requirements (Type II-N, UBC); if alternative exterior/interior materials are selected, they should also be noncombustible.	Should be responsive.
e. <u>Fire Separation:</u>		
(1) Fire areas: 2 hr.	2-hr walls possible with light-gauge metal framing and X-type gypsum board (2 layers, 5/8 in. each side).	Should be responsive.
(2) Means of egress: 1 hr.	No inherent limitations on separation of means of egress; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.

Table A2 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(3) Hazard separation: 1 hr.	No inherent limitation on hazard area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.
(4) Exit access corridor: 0 hr. No rating required with direct access.	Not applicable.	Not applicable.
(5) Others: classroom 1 hr.	No inherent limitation on other area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 3/8 in. each side).	Should be responsive.
<b>f. Interior Finishes:</b>		
(1) Wall: Class A or B.	Interior finishes provided per users' requirements.	Should be responsive.
(2) Floor: Class 1 or 11.	Interior finishes provided per users' requirements.	Should be responsive.
<b>g. Sprinkler:</b> Required in hazard areas (custodial closet).	Sprinklers installed per conventional construction practices.	Should be responsive.



Table A2 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
h. <u>Alarm</u> : direct linkage to fire station required. Manual and automatic alarm with smoke and heat detectors.	Alarm systems can be installed per conventional construction practices.	Should be responsive.
3. <u>Structural</u>		
a. <u>Live Loads</u> : Per ANSI A58.1.	Structural design is per local conditions and code requirements; Army requirements are comparable.	Should be responsive.
(1) Vertical (Roof): 45 lb/sq ft (CONUS).	40-50 lb/sq ft typical, higher as required.	Should be responsive.
(2) 40 lb/sq ft classroom, 100 lb/sq ft corridor.	40-50 lb/sq ft typical, higher as required.	Should be responsive.
(3) Wind: 80 mph (CONUS).	20-25 lb/sq ft typical.	Should be responsive.
(4) Seismic: Zone 4.	No inherent limitations.	Should be responsive.
b. <u>Dead Loads</u> : As required.	Design as required.	Should be responsive.
4. <u>Quality and Durability</u>		
a. <u>Exterior</u> : "durable low maintenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements; materials and quality can be per users' requirements, as conventional construction.	Should be responsive.
b. <u>Thermal Envelope</u> : Solar and energy budget analyses required.	No inherent limitations; using pre-engineered wall and roof panels, U values of .14 to .04 are typical; however, values of .024 and lower are feasible.	Should be responsive.
(1) <u>Roof</u> :		

Table A2 (Cont'd)

U.S. Army Requirements

Alternative Construction Method Capabilities

Responsiveness to U.S. Army Requirements

- (2) Walls:
- (3) Floors: (over ventilated crawl space).
- c. Interior Construction:  
"durable maintenance surfaces."
- See 1j(1). Interior finish material qualities can be per users' requirements as conventional construction.
- Should be responsive.
- 5. Building Utilities:
  - a. HVAC Systems: per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.
  - HVAC design and installation per local conditions and code requirements. No inherent limitations on HVAC system.
  - b. Plumbing Systems: per DOD 4270.1M and TM 5-810-5.
  - Plumbing design and installation per local requirements. Fixtures and equipment quality per users' requirements. No inherent limitations on plumbing system.
  - c. Electrical Systems: design per TM 5-811-1 with modifications. Lighting levels up to 50 fc.
  - Electrical design and installation per local code requirements. No inherent limitations on electrical systems.

Table A3

Metal Frame Component Systems

Responsiveness to  
U.S. Army Requirements

Alternative Construction  
Method Capabilities

U.S. Army Requirements

1. Architectural

a. Building Configuration: "Efficient design" for economical construction; typically rectilinear.

Rectangular building configurations are typical; however, there is no inherent limit to the range of configurations possible.

Should be responsive.

b. Interior Spaces: Enclosed age group activity modules and offices; open activity areas; food preparation and building service cores (toilets, custodial, mechanical). 8-ft planning grid preferred.

Enclosed spaces typically are by partitions bearing or nonbearing; no limitation to configuration or location.

Should be responsive.

c. Clear Span/Area Dimensions:

(1) Enclosed space: about 290 sq ft with minimum room dimension of 12 ft.

No inherent limitation to enclosed space; minimum room dimensions can be per users' requirements as with conventional construction; maximum room dimensions are only limited by clear spans of light structural systems; span capabilities exceed clear span requirements for enclosed and open spaces.

Should be responsive.

(2) Open areas: no designated open-area square footage. Columns are tolerable within open areas. All minimum dimensions within open areas are 12 ft or less.

No inherent limitations; clear span capabilities exceed clear span requirements for open space (typical spans 8 ft, 60 ft, 100 ft possible); columns may intrude on spaces.

Should be responsive.

d. Partitioning: throughout building.

No inherent limitations to partition location; most convenient on planning modular/structural grid line.

Should be responsive.

Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
e. Ceiling Height: 8 ft maximum throughout building.	8 ft-0 in. typical.	Should be responsive.
f. Number of Stories: One.	One- and two-story typical, four and five stories possible.	Should be responsive.
g. Accommodation of Plan Features:		
(1) Building entrances: any location at building perimeter.	No inherent limitation on location of entrance.	Should be responsive.
(2) Emergency egress: throughout building perimeter.	No inherent limitation on location, configuration, or type of emergency egress.	Should be responsive.
(3) Windows: throughout building perimeter.	No inherent limitations on location or type of windows.	Should be responsive.
(4) Food preparation area: central location.	No inherent limitations on location of food preparation or other "wet" areas; clustered plumbing and utilities.	Should be responsive.
(5) Toilet facilities: various locations within building.	No inherent limitations on the location of toilet areas; clustered plumbing and utilities are preferred.	Should be responsive.
(6) Mechanical: any location at building perimeter; access to exterior only.	No inherent limitations on the location of mechanical spaces.	Should be responsive.

Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
h. <u>Aesthetics</u> : "harmonious with the existing permanent structures."	(1) Building form, proportions: typically rectangular; gable, hip, or shed roof lines.	Should be responsive; methodology most capable of configuration to "residential" image per users' requirements.
(2) Exterior materials: typically brick, stucco, siding.	Typically sheet or lap siding in many materials; stucco or masonry veneers may be site-installed per users' requirements; most finish materials possible. Typically shingle roofing, standing seam metal roofing; other roofing materials possible.	Should be responsive.
i. <u>Interior Construction</u> :	Walls typically gypsum board painted or vinyl-faced; wainscoting possible in plastic laminates, sheet vinyl, or carpet; other finishes, ceiling, floor, and wall as per users' requirements.	Should be responsive; attention must be given to high-abuse areas in design evaluation.
(1) Finishes: floors - vinyl, carpet; walls - painted, carpet, vinyl, with provision of tack surfaces; ceilings - painted, acoustic.	Interior noise control measures similar to conventional construction practices.	Should be responsive; attention must be given to acoustics in design evaluation.
(2) Other features: casework, platforms, dividers.	No inherent limitations to building accessibility to the handicapped.	Should be responsive.
j. <u>Noise Control</u> : peak levels - 85 dBA; sustained levels - 45 dBA; no specific noise control measures identified.		
k. <u>Handicapped Provisions</u> : building access per ANSI A117.1.		

Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
2. Fire Safety:		
a. Floor Area Limitations: 13,500 sq ft; additional area allowed with provision of fire safety features (per UBC, 200 percent plus).	No inherent limitations to building fire separation area; area separation walls possible.	Should be responsive; most centers will not require area separation.
b. Height Limitation: One story.	One story typical.	Should be responsive.
c. Exits:		
(1) Numbers required: 2 per each fire area; plus 1 each room used as child activity space.	No inherent limitations.	Should be responsive.
(2) Access corridor width: minimum 6 ft.	No inherent limitations.	Should be responsive.
(3) Travel distance: 150 ft maximum + 50 ft is sprinkled.	No inherent limitations.	Should be responsive.
d. Fire-Resistive Requirements: 11-N (per UBC) "Noncombustible." No rating required for any major building element: (1) structure, (2) exterior wall, nonbearing, (3) interior wall, nonbearing, (4) roof, (5) floors, (6) exterior doors and windows.	Fully complies with Army "Non-combustible" requirements (Type II-N, UBC).	Should be responsive.
e. Fire Separation:		
(1) Fire areas: 2 hr.	2-hr walls possible with light-gauge metal framing and X-type gypsum board (2 layers, 5/8 in. each side).	Should be responsive.

Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(2) Means of egress: 1 hr.	No inherent limitation on separation of means of egress; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).	Should be responsive.
(3) Hazard separation: 1 hr.	No inherent limitation on hazard separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).	Should be responsive.
(4) Exit access corridor: 0 hr. No rating required with direct access.	Not applicable.	Not applicable.
(5) Others: classroom 1 hr.	No inherent limitation on other area separation; 1-hr walls possible with light-gauge metal framing and X-type gypsum board (1 layer, 1/2 in. each side) or regular gypsum board (1 layer, 5/8 in. each side).	Should be responsive.
f. Interior Finishes:		
(1) Wall: Class A or B.	Interior finishes provided per users' requirements.	Should be responsive.
(2) Floor: Class 1 or 11.	Interior finishes provided per users' requirements.	Should be responsive.
g. Sprinkler: Required in hazard areas (custodial closet).	Sprinklers installed per conventional construction practices.	Should be responsive.

Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
h. Alarm: direct linkage to fire station required. Manual and automatic alarm with smoke and heat detectors.	Alarm systems installed per conventional construction practices.	Should be responsive.
3. <u>Structural</u>		
a. <u>Live Loads</u> : Per ANSI A58.1.	Structural design is per local condition and code requirements; Army requirements are comparable.	Should be responsive.
(1) Vertical (Roof): 45 lb/sq ft (CONUS).	35-50 lb/sq ft typical, higher as required.	Should be responsive.
(2) 40 lb/sq ft classroom, 100 lb/sq ft corridor.	35-50 lb/sq ft typical, higher as required.	Should be responsive.
(3) Wind: 80 mph (CONUS).	20-25 lb/sq ft typical.	Should be responsive.
(4) Seismic: Zone 4.	No inherent limitations.	Should be responsive.
b. <u>Dead Loads</u> : As required.	Design as required.	Should be responsive.
4. <u>Quality and Durability</u>		
a. Exterior: "durable low maintenance surfaces"; 25-yr permanent construction.	See 1h(2). Door and window types and materials can be per users' requirements; quality can be per users' requirements as per conventional construction.	Should be responsive.
b. <u>Thermal Envelope</u> : Solar and energy budget analyses required.		
(1) Roof:	Up to about $U = .03$ , depending on roof structure.	Should be responsive.
(2) Walls:	Up to $U = .05$ typical.	Should be responsive.



Table A3 (Cont'd)

U.S. Army Requirements	Alternative Construction Method Capabilities	Responsiveness to U.S. Army Requirements
(3) Floors: (over ventilated crawl space).	Up to U = .05 typical.	Should be responsive.
c. Interior Construction: "durable maintenance surfaces."	See 1j(1). Interior finish material qualities can be per users' requirements as conventional construction.	Should be responsive.
5. Building Utilities:		
a. HVAC Systems: per DOD 4270.4M, TM 5-810-1, and/or TM 5-810-2.	HVAC design and installation per local conditions and code requirements. No inherent limitations on HVAC system.	Should be responsive.
b. Plumbing Systems: per DOD 4270.1M and TM 5-810-5.	Plumbing design and installation per local code requirements. Fixtures and equipment quality per users' requirements. No inherent limitations on plumbing system.	Should be responsive.
c. Electrical Systems: design per TM 5-811-1 with modifications. Lighting levels up to 50 fc.	Electrical design and installation per local code requirements. No inherent limitations on electrical systems.	Should be responsive.

**APPENDIX B**

**U.S. ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY  
SURVEY FORM FOR PROPRIETARY CHILD CARE ORGANIZATIONS/FACILITIES**

# SURVEY RESPONSES

# INSTRUCTIONS

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(Date)  
 (Organization Name)  
 (Organization Address)  
  
 (Respondent Name/Title)  
 (Respondent Ofc div/br., etc.)  
 (Telephone)

(Please provide response data current as of the date of survey completion reflecting all current facilities. Info in [ ] provided previously by telephone; check if valid)

## GENERAL - BACKGROUND/APPROACH

# CENTERS	_____	(Total centers in operation)
NEW CTRS/YEAR	_____	(Projected new centers in '84)
STATES OPRN	_____	(Number of states w/centers. Please provide a list of states and number of centers/state.)
USDA FOOD PROG	_____	(Indicate whether centers participate in USDA Child Care Food Program by yes "X," or no "O")
SERVICES	(X,O) (%)	(Indicate provided "X" or not provided "O," and the % of the program represented)
-FULL DAY	_____/_____	
-PART DAY	_____/_____	
-PRESCHL AGE	_____/_____	
-AFTER SCHOOL	_____/_____	
-DROP IN (HRLY)	_____/_____	
-NIGHT	_____/_____	
-WEEK END	_____/_____	
OPERATION SCHEDULE		(Indicate typical operation schedule by days/week "Sun, Mon, Tues, Wed, Thur, Fri, Sat" and operation hours, ex. 0630-1830 and preferred schedule and hours)
-DAYS/WEEK	_____/_____	
-HOURS/DAY	_____/_____	

## GENERAL - FACILITY

DESIGN/CONSTRUCTION		
-STD/INDIV	_____	(Indicate whether facilities are constructed from standard or individual designs)

# POPULATION

-MAX OCCUP

-ADULTS

-CHILDREN

-TOTAL

(Indicate range of code-specified maximum occupancy for all centers and preferred occupancy for adults, children, and total)

# SIZE

-CENTER(SF)

-PLAY YARD(SF)

-SITE(SF)

(Indicate sizes as ranges for all centers and size preferred)

# PLAN ARRANGEMENTS

-OPEN/CLOSED

-SING/MULT STOR

-TOILETS(CHILD)

-CENTRAL/INDIV

(Indicate range of arrangements provided at all centers and preferred arrangement)

# LIFE SAFETY

-AREA LIMITS(SF)

-EXITS

-#s/AREA

-DIR FRM CLSRM

-CORR WIDTH(FT)

-FIRE PROTECT

-CONSTRUCT(HRS)

-SEPARAT(HRS)

-EXITWAYS(HRS)

-INT FIN(CLASS)

-ALARM SYSTEM

-TO FIRE STAT

-INTERNAL

-MANUAL

-AUTOMATIC

-SMOKE DETECT

-SPRINKLER

(Indicate life safety requirements as "CODE" or actual minimums where in excess of code)

(Fire resistance in hours for:  
Construction/Structure;  
Area Separation;  
Means of Egress)  
(Interior finish classification)  
(Indicate provided "X," or not provided "0")

-CODE

(Indicate provided "X," or not provided "0")  
(Indicate actual code that buildings are designed to, ex. NFPA 101)

-CONSTRUCTION TYPE

-TYPE-I

-TYPE-II

-TYPE-III

-TYPE-IV

-TYPE-V

(Indicate provided "X," or not provided "0". Construction types are in accordance with NFPA 101 & 220, and listed in descending order of fire resistance)

# BARRIER FREE (Adults/Children)

-INDR FURN/EQUIP

-OUTDR PLAY EQUIP

-TOILETS

-RAMPS

-ADDTL CIRC

-CORR WIDTH(FT)

-DOOR WIDTH(IN)

(Indicate which facility elements are designed to be accessible to the handicapped and for which ages, adult-staff/children, by provided "X," or not provided "0")  
(Indicate minimum dimensions)  
(Indicate minimum dimensions)

(Please provide a separate list of BUILDING, SITE WORK, PLAYGROUND, and SITE costs in \$/GROSS SF for twelve (total cases) of your most recent facilities constructed in the following states (1 case/state): Alaska, Arizona, California, Colorado, Georgia, Louisiana, Massachusetts, New York, North Carolina, South Carolina, Texas, and the Washington, D.C., metropolitan area. If you have no facilities in a particular state or states, or if the most recent facility in a particular state is more than one year old, substitute data from more recent facilities in a state of your choosing. Please indicate the city, state, and beneficial occupancy date of each case listed.)

COST/SF GROSS

-BUILDING

\_\_\_\_\_/\_\_\_\_\_

(Indicate the range of costs in \$/gross square foot for all buildings constructed in the past year and the average or cost for planning purposes. Consider all building costs to the "five foot line.")

-SITE WORK

\_\_\_\_\_/\_\_\_\_\_

-PLAY GROUND

\_\_\_\_\_/\_\_\_\_\_

-SITE

\_\_\_\_\_/\_\_\_\_\_

-TOTAL FACIL

\_\_\_\_\_/\_\_\_\_\_

(Indicate the range of costs in \$/gross square foot or lump sum for all facilities constructed in the past year and the average or cost for planning purposes)

-INCLUDED IN BUILDING COST

-BUILDING

-FXD FRN/EQUIP

-MVE FRN/EQUIP

-TOYS/MATRLS

-LOAN COSTS

-OTHER

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Indicate normal building elements included "X," or excluded "O" in the above building costs)

-INCLUDED IN SITE WORK COSTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(List major items)

-INCLUDED IN PLAYGROUND COSTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(List major items)

-FACILITY COST SAVINGS TECHNIQUES

(X,O)

-ALT CONTRACT

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Indicate Alternative Contract Methods "X" or conventional contract methods "O" utilized. If "X", list alternative contract techniques utilized, ex. competitive bid)

	(X,0)	
-ALT CONST(BLDG)	_____	(Indicate buildings constructed
-PRE-CUT	_____	with alternative techniques "X"
-PANELIZED	_____	or site-built "O". If "X", list
-MODULAR	_____	alternative construction tech-
	(List)	niques utilized for whole or
-OTHER	_____	major portions of a building)
	(X,0)	
-ALT CONST(ELM)	_____	(Indicate that building elements
	(List)	are prefabricated "X," or site-
-COMPONENTS	_____	built "O." If "X," list major
	_____	prefabricated components, ex.
	_____	interior walls, roof systems or
	_____	trusses, cabinetry, etc.)
	(X,0)	
-VOLUME PURCHASE	_____	(Indicate building elements
	(List)	purchased or ordered in volume
-COMPONENTS	_____	to achieve cost reductions "X,"
	_____	or conventional purchase "O."
	_____	If "X," list applicable elements,
		ex. appliances, cabinetry,
		equipment, construction
		materials, etc.)

---

GENERAL-PROGRAM

NET SF/CHILD	_____/____	(Indicate range of net program
GROSS SF/CHILD	_____/____	and gross SF space per child
-INDOORS	_____/____	for all facilities and average
-OUTDOORS	_____/____	or preferred net and gross)
AGE GROUPINGS		(Indicate the age spread
-INFANT	_____	definition in your centers for
-TODDLER	_____	each category. Army groupings
-PRESCHOOL AGE	_____	are INFANT[0-18M], TODDLR[18M-3YR],
-SCHOOL AGE	_____	PRESCHL[3-5YR], and SCHOOL[5-12YR])
CARE GIVERS RATIOS		(Indicate ratio as "CODE" or
-INFANT	_____/____	actual ratio preferred if in
-TODDLER	_____/____	excess of code)
-PRESCHOOL AGE	_____/____	
-SCHOOL AGE	_____/____	
MAX GROUP SIZE		(Indicate the maximum group
-INFANT	_____/____	size as "CODE" or preferred
-TODDLER	_____/____	maximum if in excess of code)
-PRESCHOOL AGE	_____/____	
-SCHOOL AGE	_____/____	
POPULATION MIX %		(Indicate the population mix in
-INFANT	_____/____	% for all centers and the
-TODDLER	_____/____	preferred population mix)

-PRESCHOOL AGE \_\_\_\_\_ / \_\_\_\_\_  
 -SCHOOL AGE \_\_\_\_\_ / \_\_\_\_\_

STAFF MIX, #

-DIRECTOR \_\_\_\_\_ / \_\_\_\_\_  
 -CLERICAL \_\_\_\_\_ / \_\_\_\_\_  
 -CARE GIVERS \_\_\_\_\_ / \_\_\_\_\_  
 -COOK \_\_\_\_\_ / \_\_\_\_\_  
 -JANITOR \_\_\_\_\_ / \_\_\_\_\_  
 -OTHER \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_

(Indicate the staff mix in numbers of staff members as a range for all centers and the preferred staff mix. If the titles identified here are inappropriate to your operations, list applicable titles)

---

PROGRAM SPACES

SECONDARY ACTIVITY SPACES

-EATING \_\_\_\_\_ / \_\_\_\_\_  
 -NAPPING \_\_\_\_\_ / \_\_\_\_\_  
 -CRIB \_\_\_\_\_ / \_\_\_\_\_  
 -DIAPER STAT \_\_\_\_\_ / \_\_\_\_\_  
 -TOILETS \_\_\_\_\_ / \_\_\_\_\_  
 -CUBBIES \_\_\_\_\_ / \_\_\_\_\_  
 -CLRM RECP/CARE \_\_\_\_\_ / \_\_\_\_\_  
 -OTHER \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_

(Indicate whether the activity is provided "X," or not provided "O" and if it is included "INCL," or excluded "EXCL" in the net activity space)

---

NONPROGRAM SPACES

ADMINISTRATION SPACES

-WAITING/RECEPT \_\_\_\_\_ / \_\_\_\_\_  
 -OFFICES \_\_\_\_\_ / \_\_\_\_\_  
 -STAFF LOUNGE \_\_\_\_\_ / \_\_\_\_\_  
 -CENTRAL STOR \_\_\_\_\_ / \_\_\_\_\_  
 -ISOLATION AREA \_\_\_\_\_ / \_\_\_\_\_  
 -ADULT TOILETS \_\_\_\_\_ / \_\_\_\_\_  
 -STAFF \_\_\_\_\_ / \_\_\_\_\_  
 -PARENTS \_\_\_\_\_ / \_\_\_\_\_  
 -UNISEX \_\_\_\_\_ / \_\_\_\_\_  
 -MALE/FEMALE \_\_\_\_\_ / \_\_\_\_\_  
 -OTHER \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ / \_\_\_\_\_

(For all nonprogram spaces, indicate whether the activity is provided "X," or not provided "O" and the preferred space allowance in gross SF)

SUPPORT SPACES

-KITCHEN \_\_\_\_\_ / \_\_\_\_\_

-LAUNDRY	_____	/	_____
-MAINT/JANITOR	_____	/	_____
-MECH/ELECT	_____	/	_____
-PANTRY	_____	/	_____
-OTHER	_____	/	_____
	_____	/	_____
	_____	/	_____

OTHER NON ASSIGNABLE SPACE

-CORRIDORS	_____	/	_____
-OTHER	_____	/	_____
	_____	/	_____
	_____	/	_____

---

OUTDOOR SPACES

PRIMARY OUTDOOR ACTIVITY

-PORCHES/DECKS	_____	/	_____
-PLAY YARDS	_____	/	_____
-OUTDOOR STOR	_____	/	_____
-OTHER	_____	/	_____
	_____	/	_____
	_____	/	_____

SECONDARY OUTDOOR AREAS

-PORTE COCHERE	_____	/	_____
-PEDEST WALKS	_____	/	_____
-VEHIC CIRC	_____	/	_____
-SERV AREA/DRIV	_____	/	_____
-OTHER	_____	/	_____
	_____	/	_____
	_____	/	_____



**APPENDIX C:**  
**PROPRIETARY FACILITY DATA DISPLAY FORMAT**

COMMENTS

SELECTED CHILD CARE CENTER

COMMENTS

CENTRAL HEADQUARTERS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CENTER DATA (Actual)

NATIONAL ORGANIZATION DATA  
Average and Preferred

ORGANIZATIONAL BACKGROUND

- Centers in Operation: \_\_\_\_\_  
-New Centers in 1984: \_\_\_\_\_  
-States of Operation: \_\_\_\_\_

Date of Opening: \_\_\_\_\_

GENERAL FACILITY CHARACTERISTICS

Design/Construction Approach:

- Standard(or)Individual Designs

Sizes: Average / Preferred)

-Center(sq ft)

-Play Yard(sq ft)

-Site(sq ft)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Standard(or)Individual Design

(Actual)

Plan Arrangements Provided:

(Average / Preferred)

-Open(or)Closed/Open(or)Closed

-Single(or)Multiple Story/Single(or)Multiple Story

-Children's Toilets

(Actual)

Open(or)Closed

Single(or)Multiple Story

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA ACTUAL

COMMENTS

Central(or)Individual/Central(or)Individual

Central(or)Individual

Center Capacity:

-Maximum Occupancy

(Licensed / Design) (Actual / Licensed)

-Children

OPERATIONAL REQUIREMENTS

Services: (Provided / : of Program)

-Full Day /

-Part Day

-Preschool Age /

-After School /

-Drop in (Hourly) /

-Night /

-Weekend /

(Provided / : of Program)

-Full Day

-Part Day

-Preschool Age /

-After School

-Drop in (Hourly) /

-Night /

-Weekend /

Schedule:

(Average / Preferred)

-Days/Week

-Hours/Day

(Actual)

Participate in USDA Food Program

Participate in USDA Food Program

(Average / Preferred)

Net sq ft/Child:

Gross sq ft/Child: (Average / Preferred)

-Indoors

-Outdoors

Age Groupings:

-Infant

-Toddler

(Definition)

(Actual / Code) Licensing Code:

POC:

(Actual / Code)

(Definition)

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Preschool Age

-School Age

Care-Giver Ratios:

(Average / Preferred)

-Infant

-Toddler

-Preschool Age

-School Age

Maximum Group Size:

(Average / Preferred)

-Infant

-Toddler

-Preschool Age

-School Age

Population Mix:

(Average % / Preferred %)

-Infant

-Toddler

-Preschool Age

(Actual / Code)

(Actual / Code)

(Actual No. / %)

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-School Age \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Staff(No.): (Average / Preferred)

-Director \_\_\_\_\_  
-Clerical \_\_\_\_\_  
-Care-Givers \_\_\_\_\_  
-Cook \_\_\_\_\_  
-Janitor \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FACILITIES REQUIREMENTS

Life Safety: (Minimum Criteria)

-Area Limite(sq ft) \_\_\_\_\_  
-Exits \_\_\_\_\_

-Numbers/AREA

-Direct From Classroom \_\_\_\_\_  
-Exit Access Corridor Width(ft) \_\_\_\_\_

-Fire Protection

-Structure(Hrs) \_\_\_\_\_  
-Area Separation(Hrs) \_\_\_\_\_

-Exitways(Hrs) \_\_\_\_\_

-Hazard Separation(Hrs) \_\_\_\_\_

-Exit Access Corridor(Hrs) \_\_\_\_\_

-Partition(N-Bearing)(Hrs) \_\_\_\_\_

-Roof (Hrs) \_\_\_\_\_

-Interior Finish(Class) \_\_\_\_\_

-Sprinkler \_\_\_\_\_

-Alarm System Provided:

-To Fire Station

-Internal

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Actual)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Actual / Code Requirement)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Actual / Code Requirement)  
To Fire Station/To Fire Station  
Internal/Internal

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Manual  
-Automatic  
-Smoke Detect  
-Code

Manual/Manual  
Automatic/Automatic  
Smoke Detect/Smoke Detect

Construction Type Provided:

-Type I  
-Type II  
-Type III  
-Type IV  
-Type V

(Actual / Code Requirement)

-Type I  
-Type II  
-Type III  
-Type IV  
-Type V

Barrier-Free Environment:

(Provided For Adults / Children)

-Indoor Furn. and Equip./Indoor Furn. and Equip.  
-Outdoor Play Equip./Outdoor Play Equip.

(Provided For Adults / Children)  
Indoor Furn. and Equip./Indoor Furn. and Equip.  
Outdoor Play Equip./Outdoor Play Equip.

-Toilets/Toilets

-Ramps/Ramps

-Additional Circ./Additional Circ.

(Average / Preferred)

-Corr. Width(ft) /

-Door Width(in.) /

Toilets/Toilets  
Ramps/Ramps  
Additional Circ./Additional Circ.  
(Actual)

FACILITIES COSTS

\$/Gross sq ft: (Average / Planning)

-Building

-Site Work

-Playground

-Site

-Total Facil.

(Actual)

-Included in Above Building Cost:

-Building

Building

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Fixed Furniture and Equip.  
-Movable Furniture and Equip.  
-Toys/Materials  
-Loan Costs      Loan Costs

Fixed Furniture and Equip.  
Movable Furniture and Equip.

-Included in Above Site Work Costs:

-Included in Above Playground Costs:

ALTERNATIVE CONSTRUCTION & ACQUISITION TECHNIQUES

Types of Contracts Provided:

Alternative Building Construction Methods Used:

-Modular Systems  
-Wood Frame  
-Metal Frame  
-Precast Concrete  
-Pre-Engineered Systems  
-Wood Frame  
-Metal Frame

Modular Systems  
Wood Frame  
Metal Frame  
Precast Concrete  
Pre-Engineered Systems  
Wood Frame  
Metal Frame

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Precast Concrete  
-Component Construction  
-Wood Frame  
-Metal Frame  
-Precast Concrete

Precast Concrete  
Component Construction  
Wood Frame  
Metal Frame  
Precast Concrete

Prefabricated Building Components Provided:

Building Elements/Materials Purchased in Volume:

FACILITY FUNCTIONAL REQUIREMENTS

PROGRAM SPACES

Primary Activity Spaces Provided:

-Proprietary child care organizations have indicated that they provide all Primary Activity Spaces as defined in Army Guidance (DG 1110-3-143).

Secondary Activity Spaces Provided:  
( / Included in net Space)  
or (if excluded / Space Allowance)

-Eating /  
-Napping /  
-Crib /  
-Diaper Station /  
-Toilets(Ch) /  
-Cubbies /

( / Actual Space Provided)  
Eating /  
Napping /  
Crib /  
Diaper Station /  
Toilets(Ch) /  
Cubbies /



NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Classroom Recep./Care / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Classroom Recep./Care / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NONPROGRAM SPACES

Administration Spaces Provided:  
( / Space Allowance)

-Waiting-Recept. / \_\_\_\_\_  
-Vestibule / \_\_\_\_\_  
-Offices / \_\_\_\_\_  
-Staff Lounge / \_\_\_\_\_  
-Central Storage / \_\_\_\_\_  
-Isolation Area / \_\_\_\_\_  
-Adult Toilets / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

( / Actual Space Provided)  
Waiting-Recept. / \_\_\_\_\_  
Vestibule / \_\_\_\_\_  
Offices / \_\_\_\_\_  
Staff Lounge / \_\_\_\_\_  
Central Stor. / \_\_\_\_\_  
Isolation Area / \_\_\_\_\_  
Adult Toilets / \_\_\_\_\_  
\_\_\_\_\_ esented) \_\_\_\_\_  
\_\_\_\_\_

Support Spaces Provided:  
( / Space Allowance)

-Kitchen / \_\_\_\_\_  
-Laundry / \_\_\_\_\_  
-Maint./Janitor / \_\_\_\_\_  
-Mech./Elect. / \_\_\_\_\_  
-Pantry / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

( / Actual Space Provided)  
Kitchen / \_\_\_\_\_  
Laundry / \_\_\_\_\_  
Maint./Janitor / \_\_\_\_\_  
Mech./Elect. / \_\_\_\_\_  
Pantry / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Other Nonassignable Space Provided:  
( / Space Allowance)

( / Actual Space Provided)

NATIONAL ORGANIZATION DATA  
(Average and Preferred)

COMMENTS

CENTER DATA (ACTUAL)

COMMENTS

-Corridors / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

-Corridors / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

OUTDOOR SPACES

Primary Outdoor Activity Spaces Provided:  
( / Space Allowance)

-Porches/Decks / \_\_\_\_\_  
-Play Yards / \_\_\_\_\_  
-Outdoor Storage / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

( / Actual Space Provided)  
Porches/Decks / \_\_\_\_\_  
Play Yards / \_\_\_\_\_  
Outdoor Storage / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Secondary Outdoor Areas Provided:  
( / Space Allowance)

-Porte Cochere / \_\_\_\_\_  
-Pedest. Walks / \_\_\_\_\_  
-Vehic. Circ. / \_\_\_\_\_  
-Service Area and Drive / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

( / Actual Space Provided)  
Porte Cochere / \_\_\_\_\_  
Pedest. Walks / \_\_\_\_\_  
Vehic. Circ. / \_\_\_\_\_  
Service Area and Drive / \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Footnotes) \_\_\_\_\_

## DISTRIBUTION

### Chief of Engineers

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